YACHTING

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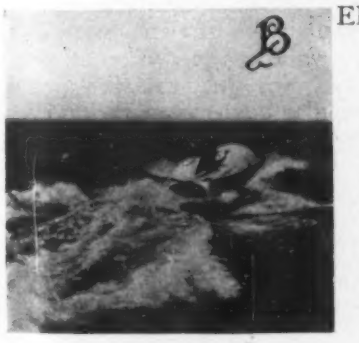
THE MARBLEHEAD STATION OF THE BOSTON YACHT CLUB

The Power Boats in the Boston Yacht Club

What a Division of Gasolene-Driven Craft Has Accomplished in a Large Sailing Organization

By W. E. HARTWELL

Photographs by N. L. Stebbins and others



BELAY there, you windjamming mossbacks! Hard astern, you gas-breathing motor bugs! If you have ever characterized each other by such mild epithets, listen now and hear how one yacht club has brought into harmony the sail and power factions that have divided it, even as they have yours—perhaps.

A little more than a year ago the power boat members of the Boston Yacht Club, always famous as a sailing organization, came to the realization that their branch of the sport was getting scant recognition, taking into consideration that probably half the 900 members were more interested in engine-driven craft than in sailboats. Whenever approached on the subject by engine enthusiasts the powers that be in the club protested, mayhap rightly, that the power boats in years past had been given their chance and had failed to "make good" as a sporting proposition. The power boat men were useful to pay bills and to put their names on subscription lists; power boat owners were handy to have along on the annual cruises to applaud the deeds of their brethren of the sail and to tow into harbor boats from off a flat sea; what more could mere masters of mechanical toys want?

However, some members of the power boat fleet believed that they were not getting a square deal. They felt themselves outsiders; felt that they really didn't belong. They were not given recognition at the home club-houses even as much as the ever-present members of the rocking-chair fleet. The situation, in their minds, called for the starting of a little kick by some of the "live wires" in the club. The kick, though gentle, was artistically developed. Hints of dissatisfaction reached the ears of club members. A new organization for power boat men was proposed; so, at least, went the rumor.

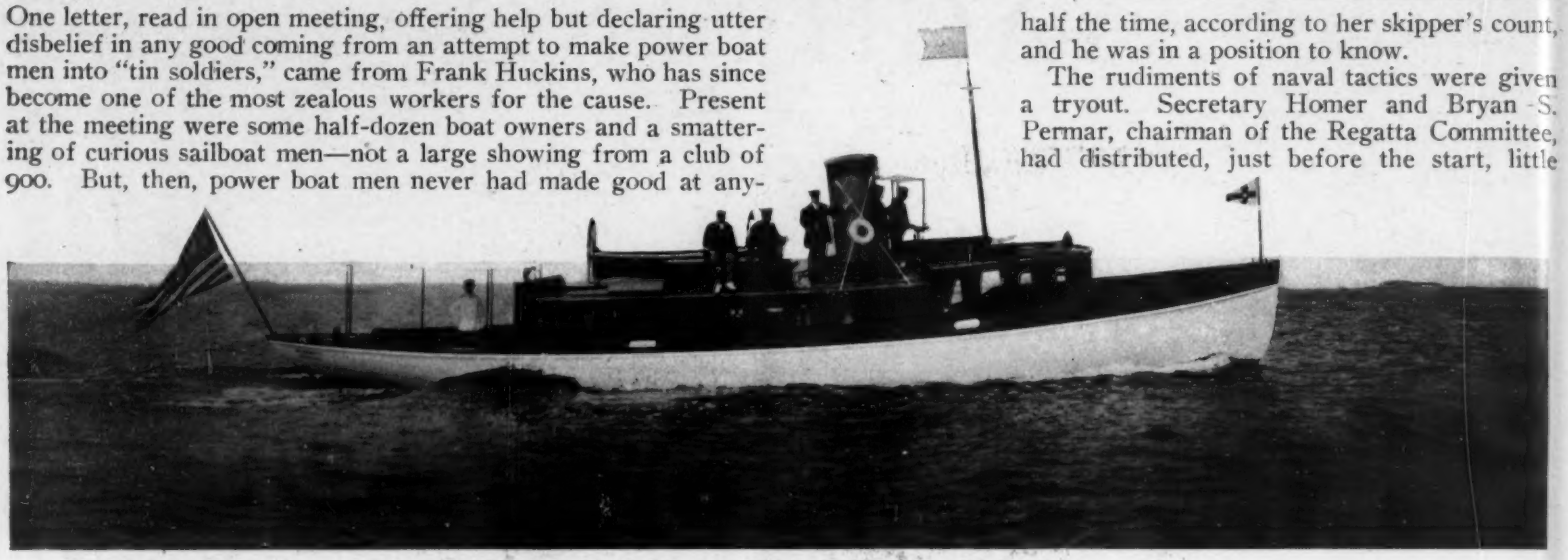
That set the sailboat men thinking. It was high time something was done, though some members, who saw in their mind's eye influential comrades with bill-paying possibilities and jolly good fellows, drifting away from the fold. As a result, at the annual meeting Roger Upton was elected Rear-Commodore, with the understanding that he was to represent the power boat men.

The commission meant to the new Rear-Commodore that it was up to him to devise some scheme to satisfy the power boat members; but, as others who have tried to solve the same problem will testify, that was no easy undertaking. No help came from the majority of the engine-lovers themselves—they, least of all, knew what they wanted. But at last, following contact with some naval officers, came the great idea.

Briefly, it was this: To form the power boat men into a strictly naval division, with naval tactics and naval drills with the accompanying runs and cruises; in other words, to have a yachting organization on the lines of Uncle Sam's North Atlantic squadron. From a naval officer who helped in the details of the scheme came the suggestion that such an organization might even receive recognition from the Navy Department as a naval auxiliary, and might be enrolled in times of necessity as a scout division.

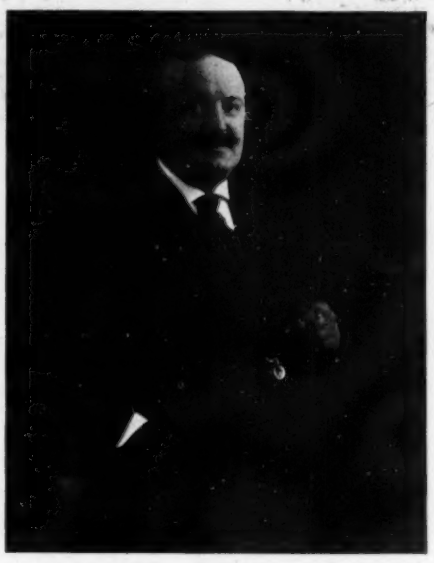
In circulars Mr. Upton outlined his plan and called a meeting at the winter headquarters of the club—the Rowe's Wharf Station. The scheme met with some enthusiasm and more ridicule.

One letter, read in open meeting, offering help but declaring utter disbelief in any good coming from an attempt to make power boat men into "tin soldiers," came from Frank Huckins, who has since become one of the most zealous workers for the cause. Present at the meeting were some half-dozen boat owners and a smattering of curious sailboat men—not a large showing from a club of 900. But, then, power boat men never had made good at anything in Massachusetts Bay, nor were they expected to.



ELIZABETH, FLAGSHIP OF REAR COMMODORE ROGER UPTON

A week later, June 5, came the real formation of the Power Boat Division of the Boston Yacht Club. There were only eight power boat owners in the gathering, but Commodore Alfred Douglass, who has a fine power craft, as well as a racing schooner, was among them, which added prestige from the standpoint of the sailboat men. A. P. Homer, who had been Mr. Upton's right-hand man in furthering the scheme and in furnishing enthusiasm, was elected secretary. It was decided not to ask formal recognition from the club—it was a bit too early for that, too great a risk right at the start. Even now, after the Division is a season old, it has no official part in the club; it doesn't need it now, and may never ask it. By entering his boat for the first trial cruise of the Division—South Boston to Marblehead Saturday, then to Hull Sunday, and home on Boston's holiday, the "Glorious 17th of June"—each boat owner present at the meeting proved himself of the right stuff at the start.



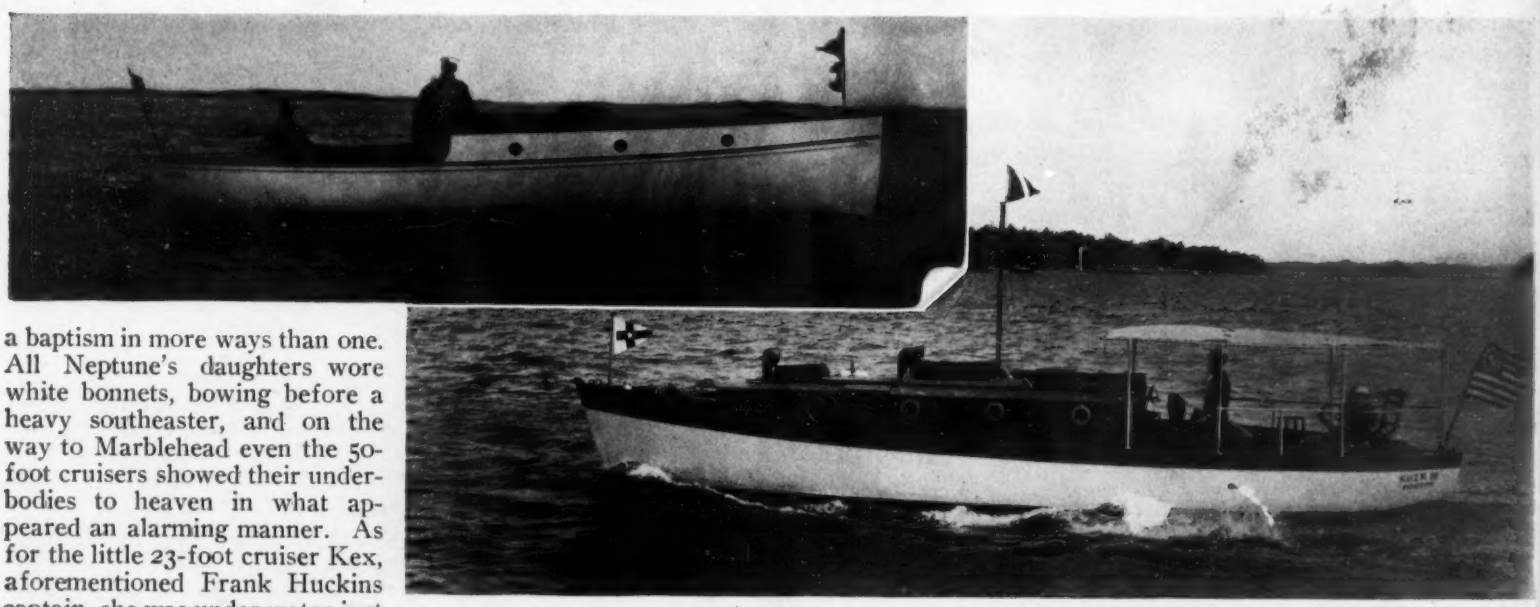
REAR COMMODORE ROGER UPTON

That first run, with six boats present, was a baptism in more ways than one. All Neptune's daughters wore white bonnets, bowing before a heavy southeaster, and on the way to Marblehead even the 50-foot cruisers showed their underbodies to heaven in what appeared an alarming manner. As for the little 23-foot cruiser Kex, aforementioned Frank Huckins captain, she was under water just half the time, according to her skipper's count, and he was in a position to know.

The rudiments of naval tactics were given a tryout. Secretary Homer and Bryan S. Permar, chairman of the Regatta Committee, had distributed, just before the start, little red booklets containing pictures of the code flags—the regular alphabet pennants every yacht of the Boston Yacht Club is supposed to carry—but with new code meanings to them for the special use of the Division.

At the head of the Division was Lieutenant-Commander Upton's steam yacht Elizabeth, the flagship throughout the season. In putting out from South Boston on one arm of her mast was the diagonal red cross "guide flag" and on the other the code flag I, meaning single column formation. This first order given from the flagship of the new Division caused some little scratching of heads and some hurried perusal of the booklets; but the skippers caught on quickly, and up straggled the answering pennants. No quirks were tried on the first trip.

Next day the fleet, enlarged by late arrivals from Boston, made a formation drill run to Hull, where, on Monday morning, the 17th, was inaugurated a system of racing by which the Boston Yacht Club has presented this section of the coast with the most fun-giving and the most popular power boat racing ever seen. As this system bids fair to be exten-



F. H. HAMILTON'S NARBO AND SECOND LIEUTENANT B. R. MILLER'S KUZN III.

COASTER, ONE OF THE SCOUT BOATS OF THE DIVISION

sively adopted, a little description of this "bang-and-go-back" scheme, for whose introduction in this part of the country ye scribe will have to take a little credit, may not be amiss.

In this race the boats were started by a preparatory, a warning and a starting signal from the flagship Elizabeth, acting as committee boat. They went over the line well together, and set out at full speed for Pig Rocks, some two miles away. When Lieutenant-Commander Upton considered that the speed boats had gone far enough, a recall whistle sounded, at which every boat turned about and made back for the starting line, which was now the finishing line. Of course, the outward leg established automatic handicaps. If all the engines had run evenly, if the turns had been made with equal skill, and if each boat had held to a perfectly straight course, all would have finished together. It's the "ifs" that make the fun. The little power dory Slatsy won by 17 seconds, the rest of the fleet coming along with only a few yards separating the boats. There have been races during the season when there has been the greatest difficulty in picking the first four boats to cross the line, so closely did they come together at the finish. It might occur to a greenhorn that such races were merely a matter of engine fortune, but men who have been in the boats know that real skill in handling, as well as good engineering, counts toward winning. The skipper and crew that can take their craft out on a straight course, can get about the quickest, and then can steer a perfect course back, should win in moderate weather. If the course out or back be before a heavy wind, some boats will profit more than others.

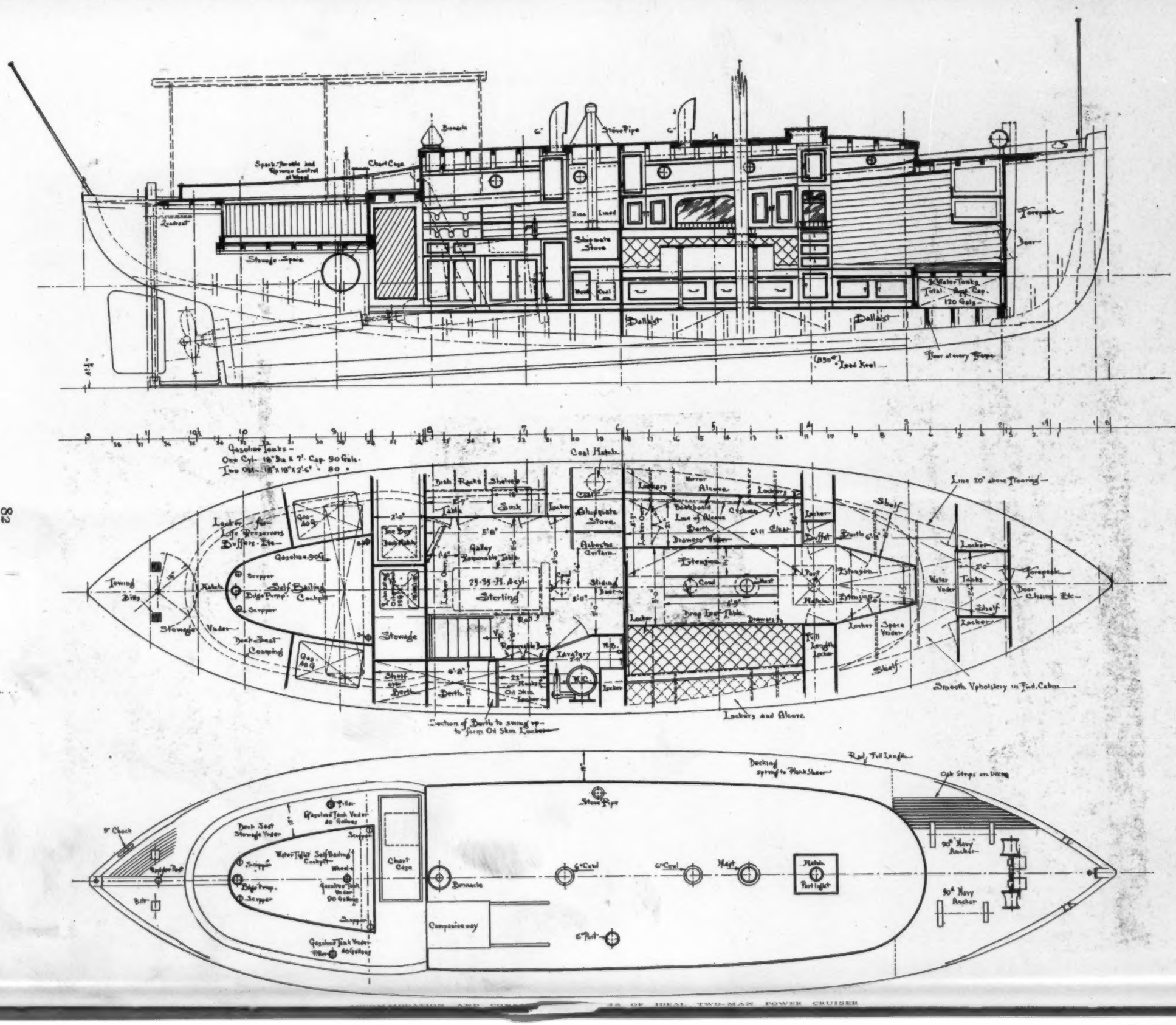
A. P. HOMER, WHO HAS WORKED HARD FOR THE SUCCESS OF THE DIVISION

Of course, there are ways to cheat in a race of this sort, such as loafing on the way out, crossing the starting line late, following a zigzag course outbound and a straight one coming back, etc.; but although none of the numerous checks that could make these things impossible have been tried by the Division during the season, the racing men have proved themselves sports of the first water by doing things strictly on their honor.

Thirty-five boats, ranging in size from a little power tender to a 75-foot, deep-sea cruiser, and in speed from a slow-moving auxiliary yawl to a needle-like 30-miler, took part in a single "bang-and-go-back" race at Marblehead last season on a rough day. Could any other system of racing bring out such a heterogeneous crowd of power boats for a single race with small prizes? It's fun, and everybody has a chance; that's the secret.

But to get back on a straight course to Division matters proper. That first little three days' cruise was but a foretaste of what was to come. (Continued on page 147.)

IN COLUMN FORMATION



SECTIONS, ELEVATION AND CONSTRUCTION OF IDEAL TWO-MAN POWER CRUISER

The Ideal Cruising Power Boat of Moderate Size

A 37-Foot Waterline Boat That Can be Handled by Two Men and Can Really Go to Sea

By L. KROMHOLZ, N.A.

MANY YACHTING readers will, no doubt, be surprised to see the trunk cabin type of boat selected as the ideal cruiser. As a matter of fact, it has several decided advantages for real service over the modern raised deck boat. These are: (1) A comparatively safe passage forward, thanks to a foot rail high enough to be of some use with a convenient handrail within reach on the cabin top; (2) a better chance to handle headsails and ground tackle, and (3) a lower freeboard, and, consequently, less windage forward. The single valid objection to the trunk cabin type—namely, that the forward end of the house offers a target for boarding seas—has been rendered negligible in this instance by the lowness and curvature of that sometimes vulnerable part. (See elevation on page 82.)

The principal dimensions are: Length over all, 40 feet; waterline, 37 feet; beam, 10 feet; draft, 4 feet.

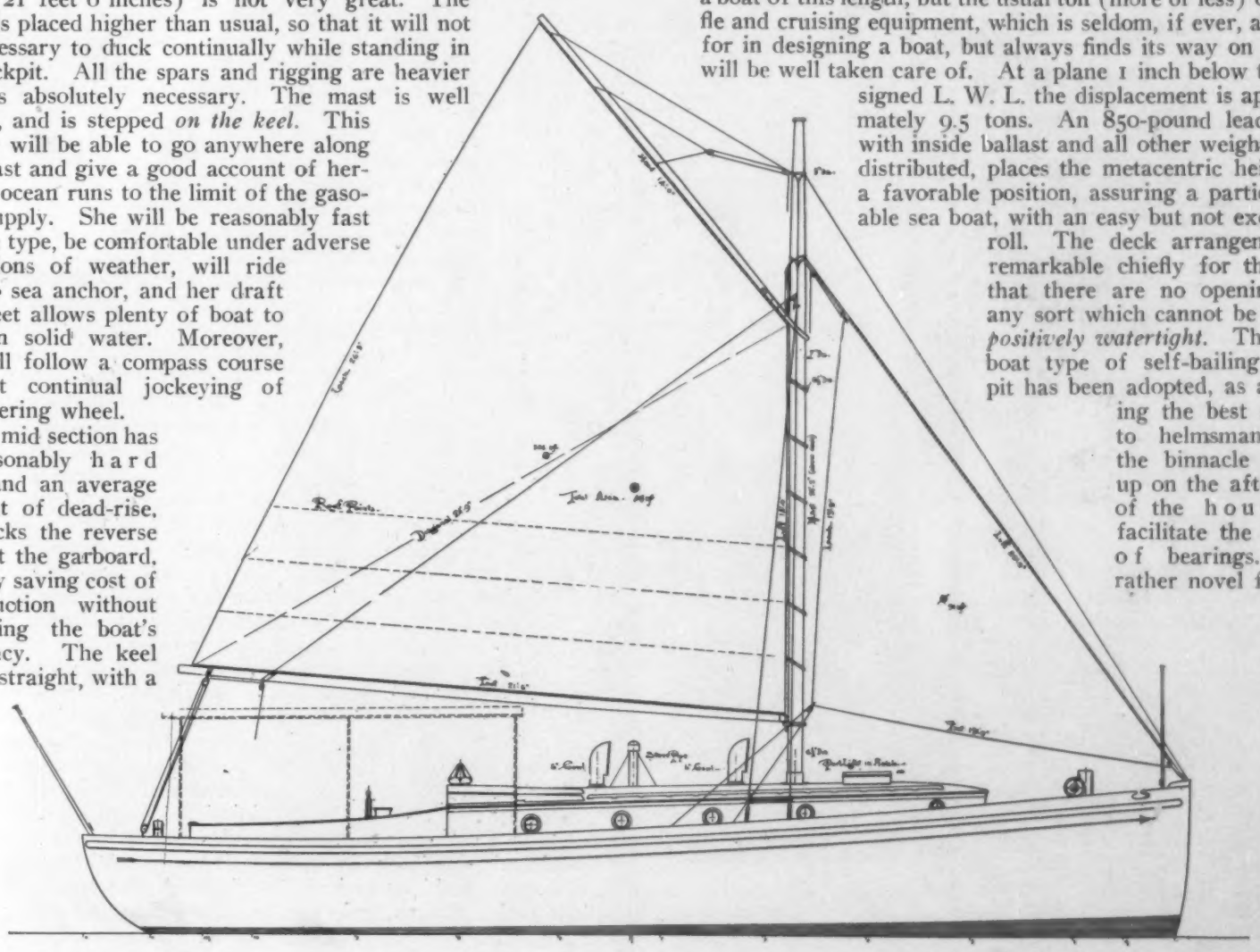
The sail plan is rather large, if present-day practice is considered, on boats where sail is auxiliary to the motor. The total area is 415 square feet. A simple sloop rig was decided upon in favor of cutting the sail area into a ketch or yawl, principally for better driving power afforded by a large mainsail and jib, as the boat is expected to be able to move along under sail alone.

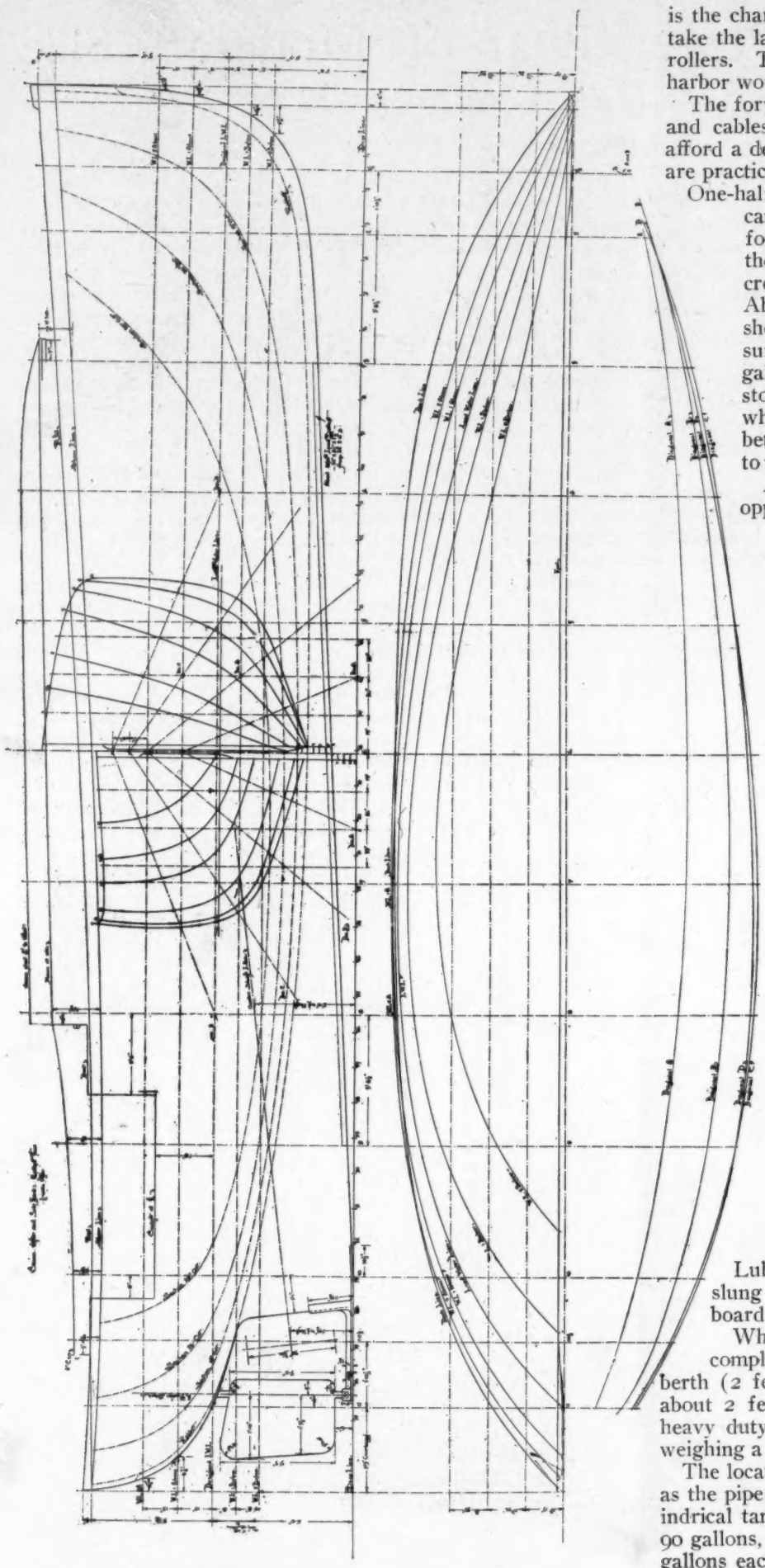
To get the most out of the mainsail, it was thought best to use a boom. The driving power of a loose-footed sail of these dimensions (21 feet 6 inches) is not very great. The boom is placed higher than usual, so that it will not be necessary to duck continually while standing in the cockpit. All the spars and rigging are heavier than is absolutely necessary. The mast is well braced, and is stepped *on the keel*. This cruiser will be able to go anywhere along the coast and give a good account of herself in ocean runs to the limit of the gasolene supply. She will be reasonably fast for the type, be comfortable under adverse conditions of weather, will ride well to sea anchor, and her draft of 4 feet allows plenty of boat to hold in solid water. Moreover, she will follow a compass course without continual jockeying of the steering wheel.

The mid section has a reasonably hard bilge and an average amount of dead-rise, but lacks the reverse turn at the garboard, thereby saving cost of construction without impairing the boat's efficiency. The keel line is straight, with a drag to facilitate steering, but still retains a very deep forefoot. The displacement forward is made up in deep V-sections rather than the U, preventing the usual pounding and permitting an easy pitching motion. The draft to rabbet is 2 feet 7 inches. The L. W. L. shows no hollow, and has its widest point (9 feet 7 inches) about 3 feet 9 inches aft the mid section, and is not over-wide aft, although allowing sufficient displacement to carry the weights properly. The after sections are easy, with plenty of reserve buoyancy. The sides amidship have a slight tumble home, the beam over planking at deck being 9 feet 9½ inches, and the extreme beam over planking is 9 feet 11½ inches. Eliminating the reverse flare in the forward sections is by no means detrimental, for the deck line is wide at this point and the sections such as to effectually turn down spray. The maximum interior room from the accommodation standpoint and the structural features of a clamp, shelf and heavy top strakes have been worked in.

There is a lively sweep to the sheer, but is by no means excessive. The freeboard is ample, being 5 feet forward, 3 feet 5¼ inches aft, and least of 3 feet 2 inches. The rail tops this by 6 inches at the stem and tapers down to 3 inches at the stern. The cabin is as low as is consistent with headroom.

A displacement of 10.5 tons might be considered excessive for a boat of this length, but the usual ton (more or less) of duffle and cruising equipment, which is seldom, if ever, allowed for in designing a boat, but always finds its way on board, will be well taken care of. At a plane 1 inch below the designed L. W. L. the displacement is approximately 9.5 tons. An 850-pound lead keel, with inside ballast and all other weights well distributed, places the metacentric height in a favorable position, assuring a particularly able sea boat, with an easy but not excessive roll. The deck arrangement is remarkable chiefly for the fact that there are no openings of any sort which cannot be closed *positively watertight*. The sailboat type of self-bailing cockpit has been adopted, as affording the best shelter to helmsman, and the binnacle is set up on the after end of the house to facilitate the taking of bearings. A rather novel feature





is the chart case on the bridge deck, which is made of a size to take the largest government charts, and will hold about thirty on rollers. This will prove a great convenience for coasting and harbor work in fair weather.

The forward deck is large enough for easy handling of anchors and cables, and is protected by narrow oak strips, which also afford a desirable foothold. It will be noticed that the deck lines are practically those of a lifeboat.

One-half the boat is arranged to form one large cabin, which can be divided into two staterooms by using curtains affording "Pullman car privacy." Low berths are used in the forward part of cabin to accommodate the entire crew when they all desire to be below at the same time. Above the berths, against the forward bulkhead, is a large shelf between two lockers, designed to house a couple of suit cases. Three water tanks, of a total capacity of 120 gallons, are under the forward part of the berths. Large storage space is obtained under the after end of the berths, which are 21 inches wide. The length is 6 feet 8 inches between bulkheads. The distance from the cushion top to the under side of forward deck beams is 3 feet 8 inches.

A full-length clothes locker is placed to starboard, and opposite is a buffet, provided with drawers, lockers, alcove, etc. A bedding locker is worked in under the deck and behind the cushion back, which forms the extension to the berth. Ordinarily these berths would not be extended, as the width is 3 feet 1 inch aft and 2 feet 3 inches forward, with a clear length of 6 feet 11 inches. The extension brings the berth front out to the table, preventing the bed clothes from sliding to the floor. Two large lockers are under each berth, and with the hanging lockers to port and starboard on the after bulkheads, in addition to the lockers under the side decks, a large amount of storage space is secured.

The flooring is high enough over the keel to prevent bilge water from getting into the drawers and yet gives *clear headroom under carlines of 6 feet 5 inches in cabin and 6 feet 2 inches in engine room.*

A sliding door divides the cabin from the engine room, which also contains the galley. It is not worth while to sacrifice cabin accommodations to obtain a separate galley, which at best would be small and inconvenient on a boat of this size. On the port side is a Shipmate coal stove in a zinc-lined compartment. The chances of fire are no more than with a kerosene or alcohol stove, and the appreciable warmth of the coal stove is often appreciated at sea. A small alcohol stove could be installed with its top set flush with the table at the after end of the galley. A large sink, plenty of locker space, dish-racks, shelves, hanging locker and removable table over engine complete the galley arrangement. The ice-box is worthy of special mention, for it is really large enough to stow away foodstuffs for a long cruise, and is conveniently filled through bridge deck hatch.

Lubricating oil is carried in a tank of 25 gallons capacity slung under the bridge deck amidships. The space to starboard can be utilized for kerosene or alcohol tank.

While an innovation, the spare berth to starboard is not complicated, and should prove practical. A section of the berth (2 feet 3 inches) swings up, forming an oilskin locker or about 2 feet square. A 4-cylinder, 4-cycle, 25-35 horsepower, heavy duty Sterling motor is shown in the plans. Any engine weighing a ton or so can be successfully installed.

The location of gasoline tanks minimizes the danger of leakage, as the pipe lines are very short and allow a gravity feed: one cylindrical tank placed under the cockpit floor (athwartship) holds 90 gallons, two oblong tanks under the deck and seats contain 40 gallons each. Larger tanks can be had in the same space. The 170 gallons give a cruising radius of about 500 miles.

The next boat in this series will be the ideal small 30-foot power cruiser.

MIAMI, THE STARTING POINT FOR THE CRUISE THROUGH THE FLORIDA KEYS

The Florida Keys

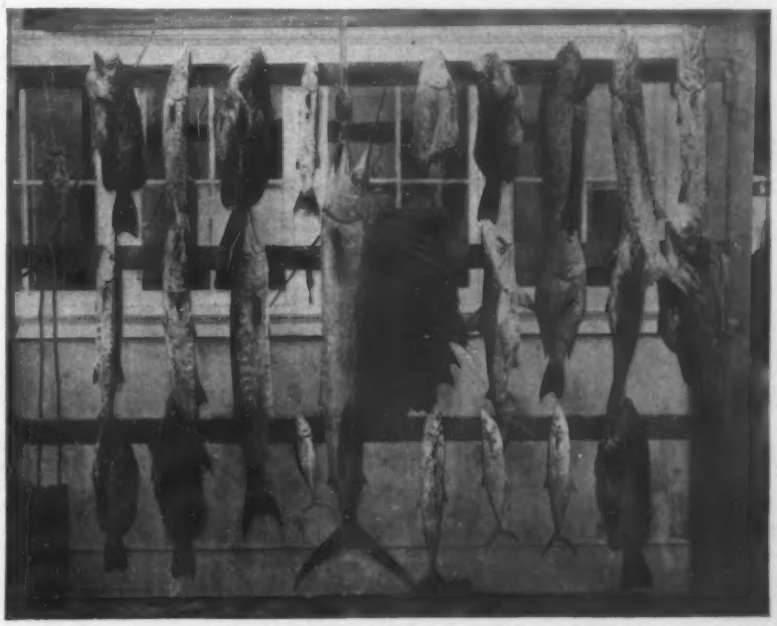
Sailing Directions for the Wonderful Cruising Waters Between Miami and Key West. The Best Fishing Grounds, Anchorages and Channels

By HARRY BELKNAP

MANY of those who cruise southward during the winter months seem to feel that when they have reached St. Augustine or Palm Beach they have arrived at their destination and seen the best part of Florida. Some boats get side-tracked for a trip up the St. John's River, while others lie at anchor all winter off one of the big hotels on the east coast and then return North without having visited one of the most wonderful and beautiful cruising grounds in the world. I refer to the Florida Keys and the stretch of water lying between Miami and Key West.

To anyone who has been down among those green, mangrove-covered islands set in a sea of clearest blue, no description of the charms of this region is necessary. I have cruised on both the east and west coasts of the peninsular, but there are no spots that appeal to me as much as do the fishing grounds and sheltered anchorages among the keys scattered over 150 miles of ideal cruising water, with plenty of good harbors, fascinating scenery, and the best fishing to be found anywhere.

Boats of 8 feet draft and less can run down the Hawk Channel, which is a straight passage between Miami and Key West outside the line of keys. It is really almost an inside passage, as it is inside of the great Florida Reef, and these outlying ledges of coral rock form an effective barrier and prevent a very heavy sea from sweeping in. This channel is well buoyed, and no difficulty will be found in following it. Good anchorages may be had at Cæsar's Creek, Indian Key, Boot Key Harbor, Newfound Harbor Keys and Boca Chica.



A GOOD CATCH. SAIL FISH IN THE CENTER, WITH BARRACUDA, GROUPERS, KING FISH, MACKEREL AND SNAPPERS

The real inside passage, however, which is navigable for boats with a draft of 3½ feet and less, lies behind the keys, and is very widely used. It passes through Biscayne Bay, Card Sound, Little Card Sound, Barnes Sound, Jewfish Creek, Blackwater Bay, Dusenbury Creek, Tarpon Basin, Grouper Creek, Baker's Cut and Florida Bay. The distance from Miami to Key West by the railroad is 156 miles; but by the route through the inside passage, Big Spanish Key Channel and the Gulf it is about 170 miles.

The best way to cruise among the keys is to take plenty of time and try the dif-

ferent fishing grounds along the way. After leaving Miami a well-staked, dredged channel takes one out into Biscayne Bay. Another channel, with a red-lighted government beacon at either end and pile beacons in between, leads out past Cape Florida into Hawk Channel.

A stop at Cape Florida is well worth while, if only for a visit to the historic old lighthouse. There is a beautiful grove of cocoanut trees on the point and a fine sandy beach along the outside for the entire length of Key Biscayne. The old tower has been abandoned ever since Fowey Rocks Light—that great spider-like structure out on the reef — was built. During the Seminole war it is related that the Indians attacked the keeper in the old tower and burned the stairway, holding him a prisoner in the top of the light for two days until a passing steamer saw his signal of distress and rescued him. Later, iron stairs were put in, and these still remain, though they are in a very precarious condition. The light formerly stood back from the beach some distance, with a grove of trees in front; but the tide sweeps around the point so violently that it has washed away the sand until now the waves lap against the foot of the old brick tower at high tide. Cape Florida is only seven miles from Miami, and there are three passages leading in to it—the outside, middle and inner channels. The latter can be negotiated even on a dark night by keeping close to shore and following the bend of the land. A long shoal makes out from the southwestern point of the key, and there is a small stake on the end of it.

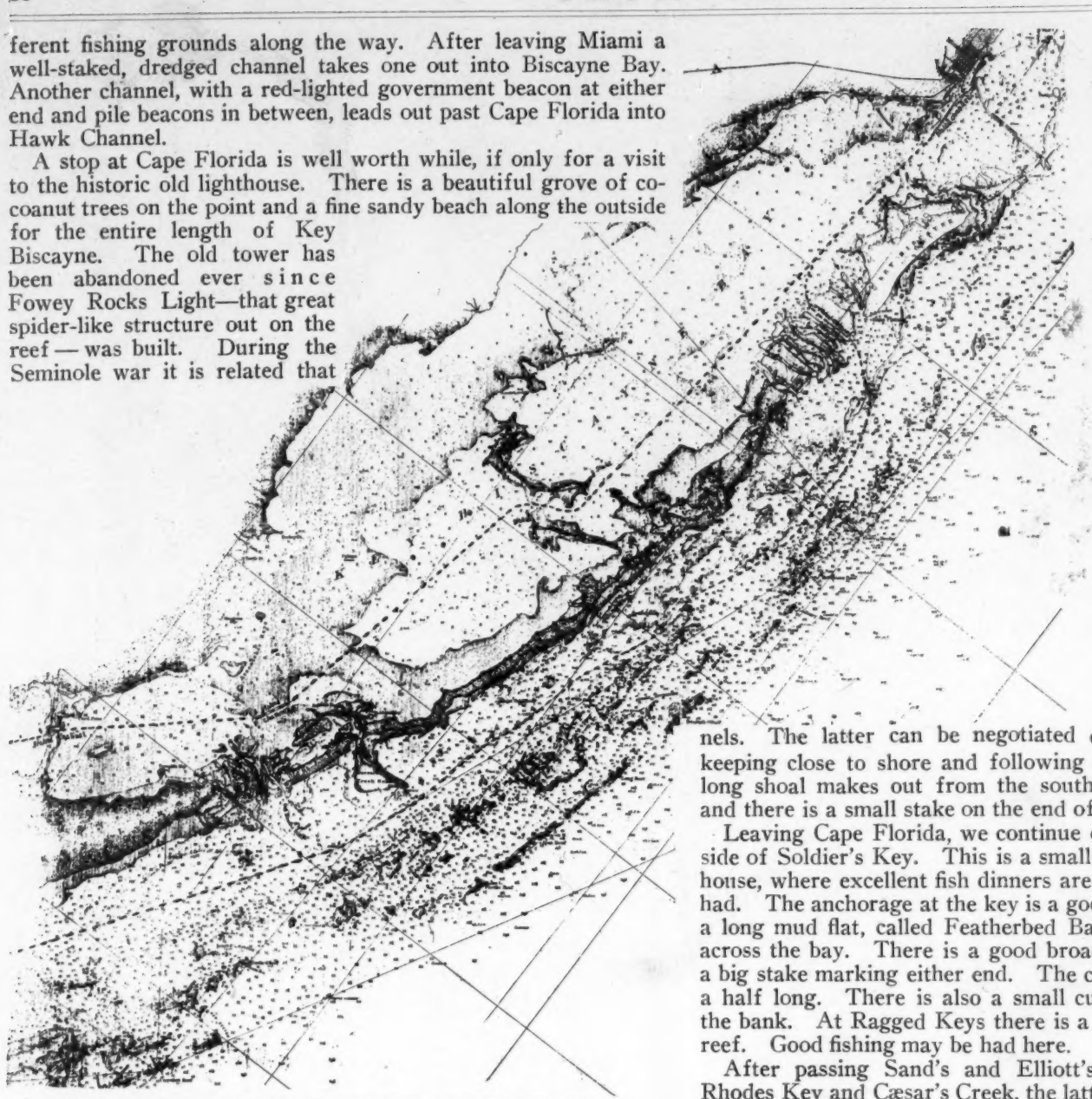
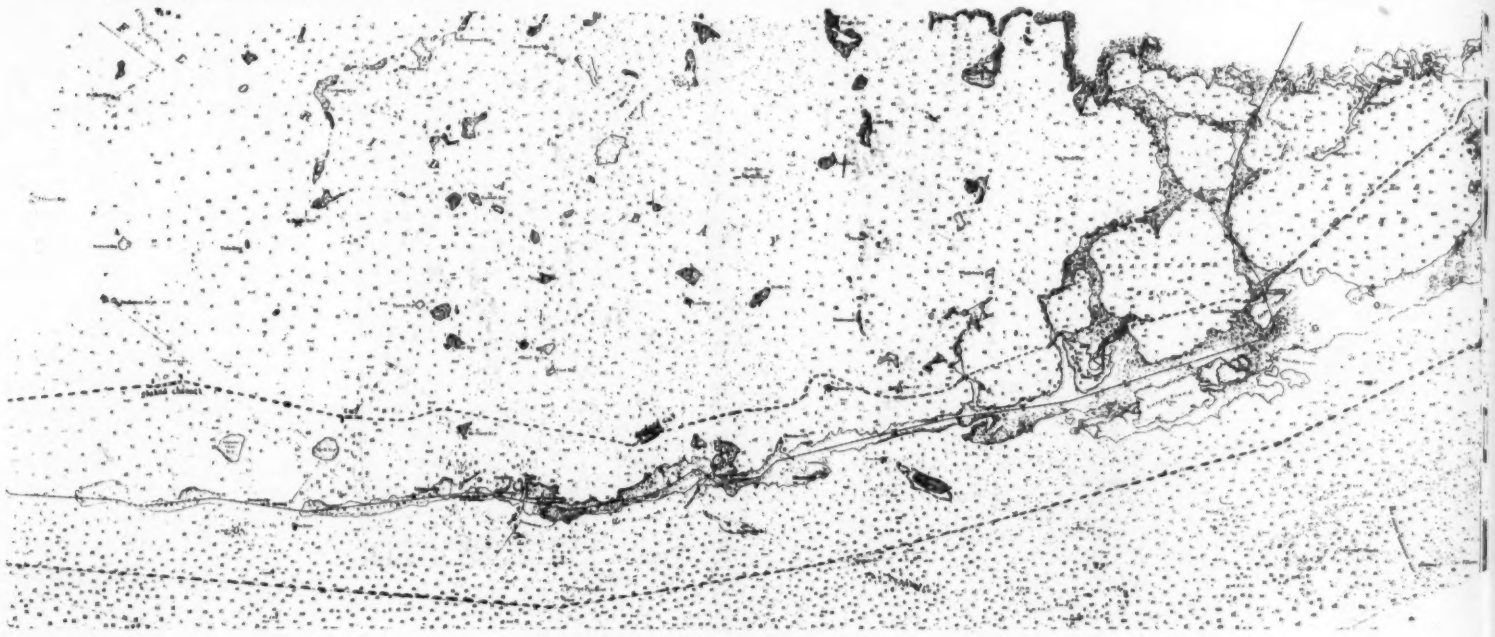


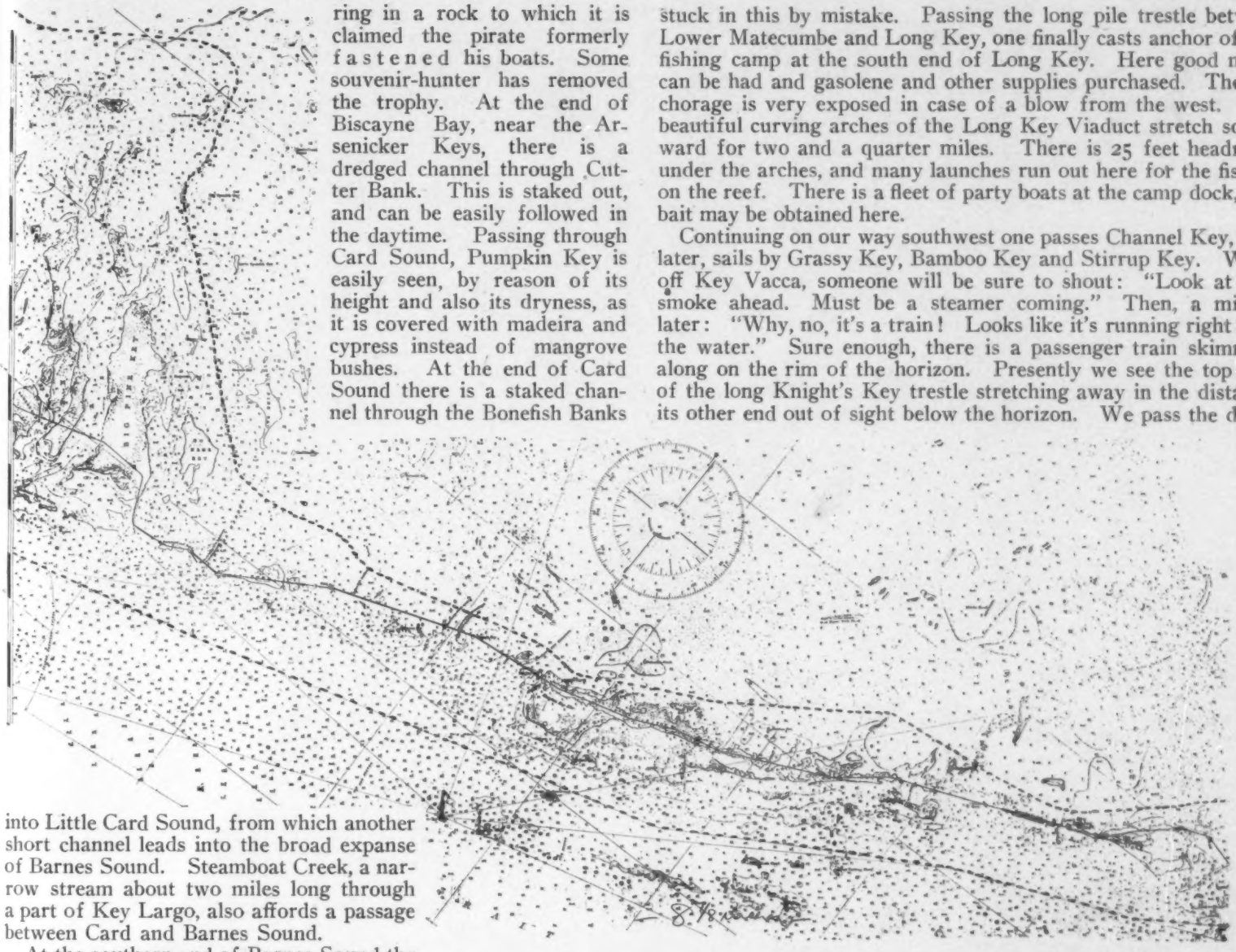
CHART SHOWING ROUTE FROM MIAMI TO KEY LARGO THROUGH THE HAWK CHANNEL AND INSIDE THE KEYS

Leaving Cape Florida, we continue on down Biscayne Bay inside of Soldier's Key. This is a small key where there is a clubhouse, where excellent fish dinners are served and rooms may be had. The anchorage at the key is a good one. Off Ragged Keys a long mud flat, called Featherbed Bank, stretches almost clear across the bay. There is a good broad channel through it, with a big stake marking either end. The channel is about a mile and a half long. There is also a small cut through the east end of the bank. At Ragged Keys there is a passage leading out to the reef. Good fishing may be had here.

After passing Sand's and Elliott's Keys we come to Old Rhodes Key and Cæsar's Creek, the latter the home of the famous pirate, Black Cæsar. Until recently there was a big rusty iron



FROM KEY LARGO TO LOWER MATECUMBE KEY



FROM LONG KEY TO THE ENTRANCE OF THE GULF OF MEXICO

ring in a rock to which it is claimed the pirate formerly fastened his boats. Some souvenir-hunter has removed the trophy. At the end of Biscayne Bay, near the Arsenicker Keys, there is a dredged channel through Cutter Bank. This is staked out, and can be easily followed in the daytime. Passing through Card Sound, Pumpkin Key is easily seen, by reason of its height and also its dryness, as it is covered with madeira and cypress instead of mangrove bushes. At the end of Card Sound there is a staked channel through the Bonefish Banks into Little Card Sound, from which another short channel leads into the broad expanse of Barnes Sound. Steamboat Creek, a narrow stream about two miles long through a part of Key Largo, also affords a passage between Card and Barnes Sound.

At the southern end of Barnes Sound the channel enters Jewfish Creek and passes through the railroad drawbridge, which has a 40-foot opening. From here we sail across Blackwater Bay, a body of water that takes its name from its peculiar dark coloring. The engine will probably come in handy to take us through Dusenbury Creek, which flows into Tarpon Basin, a small, shoal body of water where the keel will doubtless stir up the mud somewhat as we pass on and enter Grouper Creek.

This is the last of the "cricks," and the next cut—Baker's—leads into Florida Bay. This great body of water has a whitish coloring, from the constant activity of the coral polyps, and new reefs are building and new keys being formed here all the time. After passing a stake which marks a rock south of Baker's Cut, go to the westward of Pigeon Key and head southeast. The way leads through several rather narrow channels between flats and finally reaches "Cow-pens." This is a dredged cut through a small key, and there are usually a lot of white herons roosting on either side to watch you pass through.

It is all plain sailing after this to McGinty's Key, which we leave to port and continue on southward past Shell Key and Lignum Vitæ. From here a channel leads up to Indian Key drawbridge. There is good fishing here, outside near Alligator Reef Light; but the tide runs through the draw like a mill race, and if you want to take a run outside you will have to wait for slack water to negotiate the bridge.

South of Lignum Vitæ there is a stake channel—also a blind one half a mile east of the real one—and boats sometimes get stuck in this by mistake. Passing the long pile trestle between Lower Matecumbe and Long Key, one finally casts anchor off the fishing camp at the south end of Long Key. Here good meals can be had and gasolene and other supplies purchased. The anchorage is very exposed in case of a blow from the west. The beautiful curving arches of the Long Key Viaduct stretch southward for two and a quarter miles. There is 25 feet headroom under the arches, and many launches run out here for the fishing on the reef. There is a fleet of party boats at the camp dock, and bait may be obtained here.

Continuing on our way southwest one passes Channel Key, and, later, sails by Grassy Key, Bamboo Key and Stirrup Key. When off Key Vacca, someone will be sure to shout: "Look at that smoke ahead. Must be a steamer coming." Then, a minute later: "Why, no, it's a train! Looks like it's running right over the water." Sure enough, there is a passenger train skimming along on the rim of the horizon. Presently we see the top part of the long Knight's Key trestle stretching away in the distance, its other end out of sight below the horizon. We pass the docks at Marathon, a railway construction camp and coaling station, where supplies and gasolene may be obtained, and sail along, marveling at the seven-mile stretch of trestle with the Moser Channel drawbridge near its middle. This draw is a big one, worked by steam, with an opening of 106 feet.

We now begin to head more to the west, and see the tall truss work of the Bahia Honda trestle to the eastward as we sail down Big Spanish Key Channel toward the Gulf of Mexico. This is a broad, deep passage from the Atlantic to the Gulf; but if you don't watch closely you can easily run out of it into another broad but shoal channel to the south. If you do this you will get lost in a maze of keys and probably land on a mud bank. We did it once and had all kinds of fun. But stick to "Big Spanish" and you will be all right. After threading your way out past Harbor Key you enter the deep, blue water of the Gulf and head south for Key West.

There is a passage in among the keys all the way from here to Key West, but I should not advise any boat drawing over 2 feet to attempt it. I followed it once with 2½, but had great difficulty in getting through. It is all plain sailing in the Gulf, with plenty of places to run into if it blows up hard from the west. The way leads past Content Keys, Sawyer Key, Marvin's Key, Snipe Keys and N. W. Boca Chica Keys. Then you sail through the northwest passage and arrive at the Island City of Key West, the terminus of the seagoing railway.

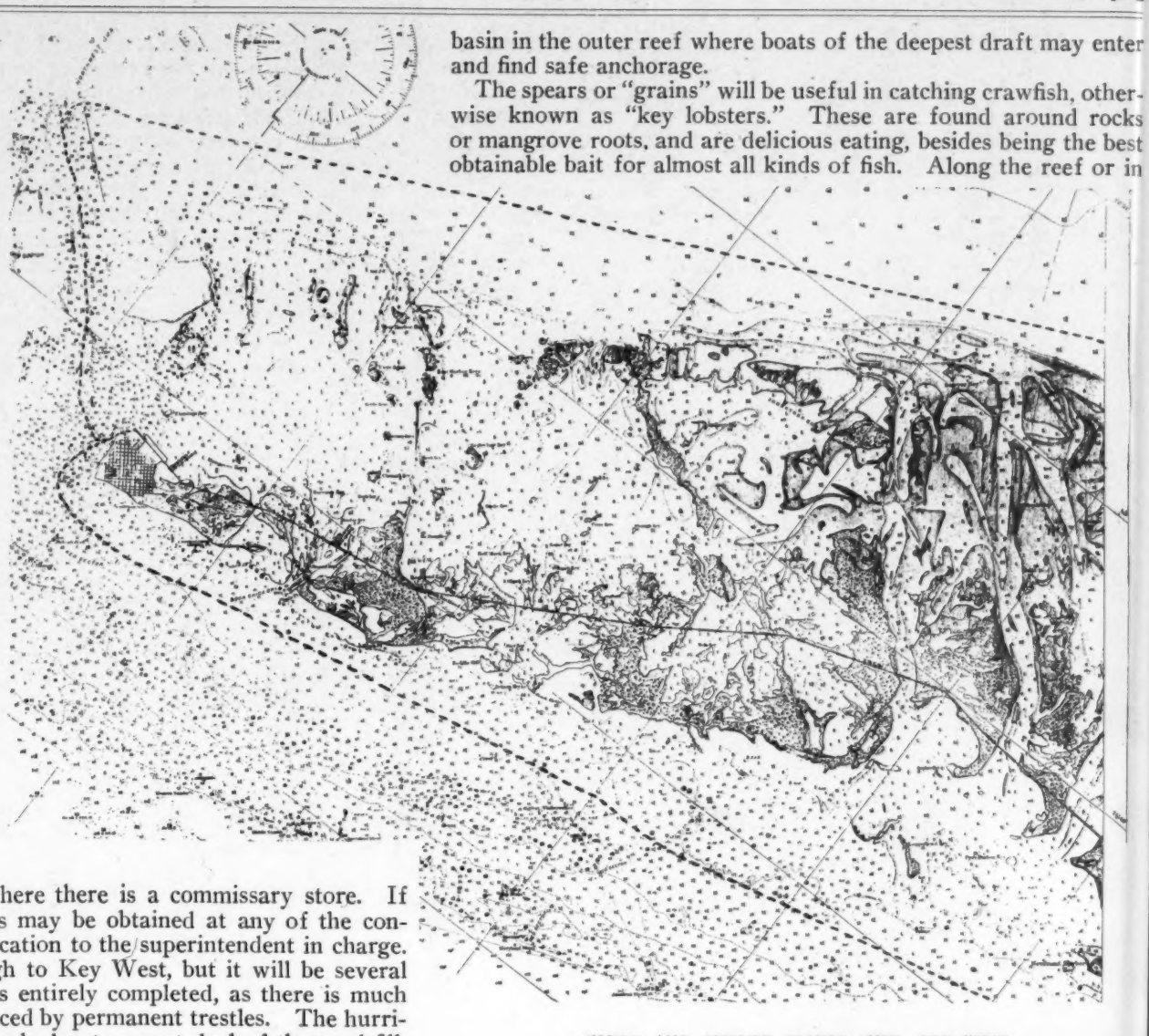
Key West is an interesting place, and is much like a foreign city, as more than half the population are Cubans or Spaniards. The sponge and fish docks are well worth a visit, and the pens where the huge loggerhead and green turtles are kept are always interesting to visitors. There is a factory for making green turtle soup, and a few cans of this really delicious preparation are a welcome addition to the larder. Key West is just waking up after a sleep of many years. It used to be called a paradise for lazy men; but, with the advent of the railroad, things are changing. There are several shipyards and marine railways, where yacht repairs may be made, and the new docks of the railroad company make the harbor more protected than formerly.

Between Miami and Key West supplies may be bought at Marathon, where there is a commissary store. If boats run short, provisions may be obtained at any of the construction camps upon application to the superintendent in charge. Trains are running through to Key West, but it will be several years before the railroad is entirely completed, as there is much temporary work to be replaced by permanent trestles. The hurricane of a few years ago washed out a great deal of the mud fill, and dredges have been working night and day to strengthen the embankments. While it is true that the railway has stopped up many navigable channels and detracted somewhat from the wild and primitive beauty of this region, it is not without its advantages. Provisions may be telegraphed for and sent down by rail to any desired point and a cruise thus prolonged without the necessity of running back to port for grub and mail. And if one wants to get away from all sights and sounds of civilization, the keys on the Gulf side and toward Cape Sable are as wild and uninhabited as ever.

A few words from my own experiences in cruising among the keys may prove useful to others. A pilot is not necessary, as the channels are easy to follow, and on a clear day the shoals may be easily distinguished by the coloring of the water. I should not advise any night running, except in the Hawk Channel, as that is a pretty sure prescription for going aground, unless you are thoroughly acquainted with the exact location of all the mud flats. I have given three and a half feet as the limit draft for the inside route, but boats of deeper draft use parts of it, and on high tides you could probably carry four feet all right all the way through. A glass-bottomed pail should be carried, and a "striking pole" with several "grains" and harpoons is sure to furnish sport.

The sea gardens out along the reef are wonderfully pretty when seen through a glass-bottomed bucket. Near the second beacon off Elliott's Key in the Hawk Channel are a number of dark patches. If you anchor, or let your boat drift slowly over these, you will be amazed at the beautiful coral growths, sea fans, anemones, sponges and brightly colored fishes that will pass before your eyes. Turtle Harbor, some distance south of here, is a wide basin in the outer reef where boats of the deepest draft may enter and find safe anchorage.

The spears or "grains" will be useful in catching crawfish, otherwise known as "key lobsters." These are found around rocks or mangrove roots, and are delicious eating, besides being the best obtainable bait for almost all kinds of fish. Along the reef or in



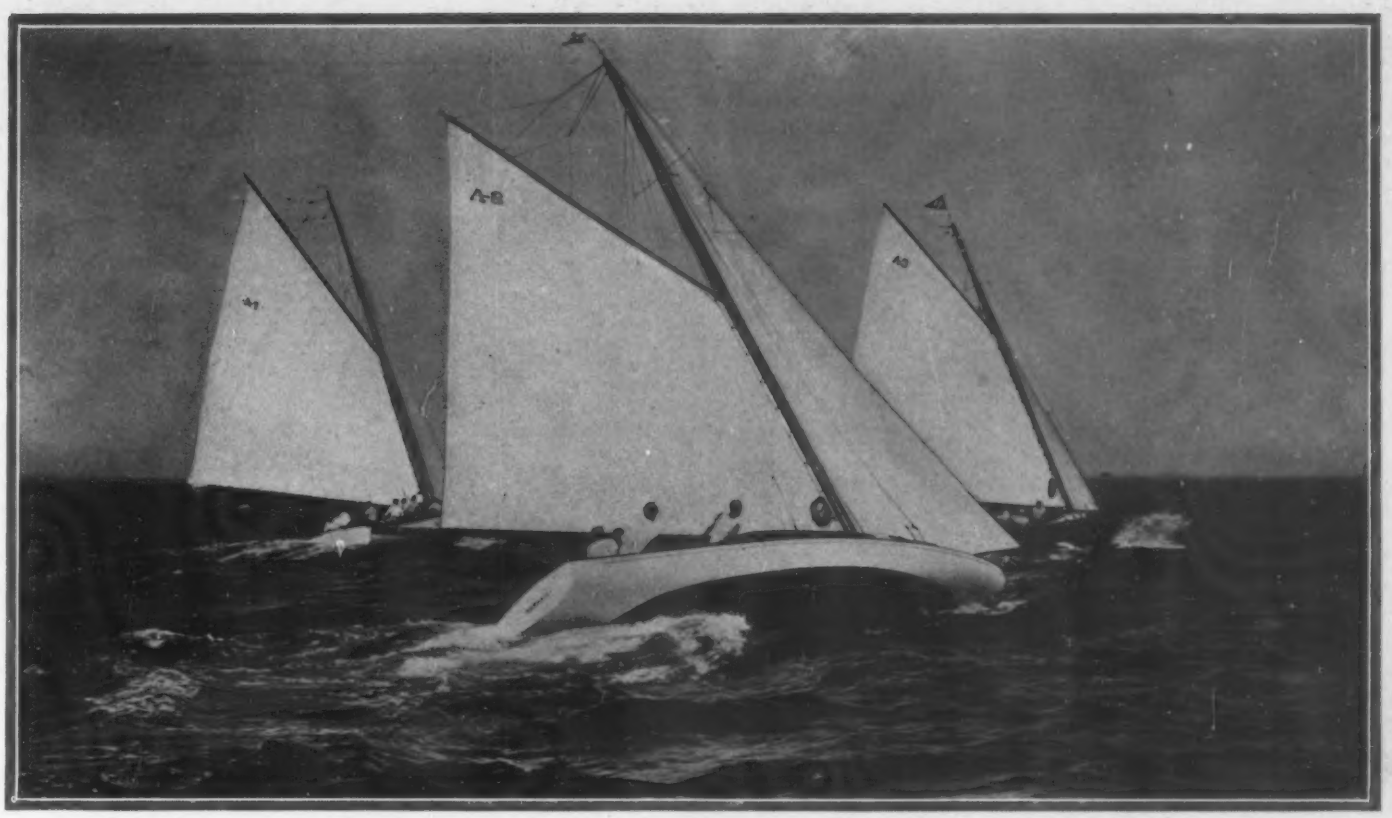
INSIDE AND OUTSIDE ROUTES INTO KEY WEST

the deep cuts and passes a great variety of bottom fish can be caught, including yellow tails, Nassau grouper, rock grouper, turbot, pork fish, red snapper, mutton fish, red mouth grunts, yellow grunts, porgies, trigger fish, snappers, angel fish, jewfish, and others. About two miles south of Carysfort Light are the remains of an old wreck. This is a wonderful spot for fishing, and on a calm day you can see the fish as they swarm up after the bait. It is a good plan to tie the heads of the crawfish together and drop them overboard for a "chum line."

Trolling along the reef with a squid or a Wilson's spoon, you will catch kingfish and big amber jacks and barracoutas. A long strip of mullet is good bait, and sometimes a piece of red and white rag proves very alluring as it is dragged through the water. Don't use more than one hook on your line, and fish with rod and reel. And if you catch more fish than you can use, let them go. After you get your first large amber jack or tarpon, don't try to land every one you hook. Bring the fish up alongside the boat and then cut out the hook and let it go. You have had all the fun of catching it, and after such a wonderful fight I always think a fish deserves its liberty. It is useless to fish during the "Northers," or unusually cool spells.

There are some guides in Miami who will guarantee to get you a tarpon any time in the year; but, as a general thing, it is not much use to go after these fish until the latter part of March. April and May are good months, and in the early summer the Silver King are very plentiful. The following are the best tarpon fishing grounds: Near Arsenicker Keys in Card Sound; along

(Continued on page 74)



A START IN CLASS A

The Inter-Club Yacht Racing Association of Massachusetts in 1912

The Last Season the Most Successful in Its History. Many Newcomers in the Association Furnish Keen, Close Racing.

By HOLLIS BURGESS

THE year 1912 on Massachusetts Bay will go down in yachting history as marking an epoch in the sport of sailboat racing. The increasing popularity of motor boats all over the country and the tendency to install gasolene engines in boats of every description had been noted with some concern by the "dyed-in-the-wool" sailing men of Massachusetts, and they determined to prove to the public beyond all dispute that sailboat racing was as strong in popular favor in the Old Bay State as in the good old days when thousands of sails dotted the waters from Cape Ann to Cape Cod. So unusual efforts were made by the Inter-Club Yacht Racing Association of Massachusetts to make the 1912 season the greatest ever seen. Their efforts were attended with remarkable success.

The history of this Association, from its formation in 1907 up to the year 1912, has been already told by the writer in the February and March, 1912, issues of YACHTING; so it is sufficient briefly to state here that the purpose of the Association is to promote the sport of yacht racing among the older boats, chiefly those that have been outbuilt or outclassed. While the Yacht Racing Association of Massachusetts has devoted itself to the formation of new classes and the building of new boats, the Inter-Club Association has taken care of the older boats, one rule of this Association being that a yacht must be at least two years old to be eligible to compete in its races, except in Classes C and S, in which new boats are now allowed.

On February 16, 1912, the annual meeting of the Inter-Club Association was held at the club-house of the South Boston Yacht Club. All the ten clubs that comprise the Association were represented—the South Boston, Mosquito Fleet, Columbia, Quincy, Winthrop, Squantum, Wollaston, Lynn, Savin Hill and Cottage Park Yacht Clubs. The treasurer's report showed the Association to be in good financial standing, and the following officers for the season were elected: President, John J. Harland; vice-president, Lincoln S. Coffin; secretary, Theodore H. Campbell; treasurer, Howard Gannett.

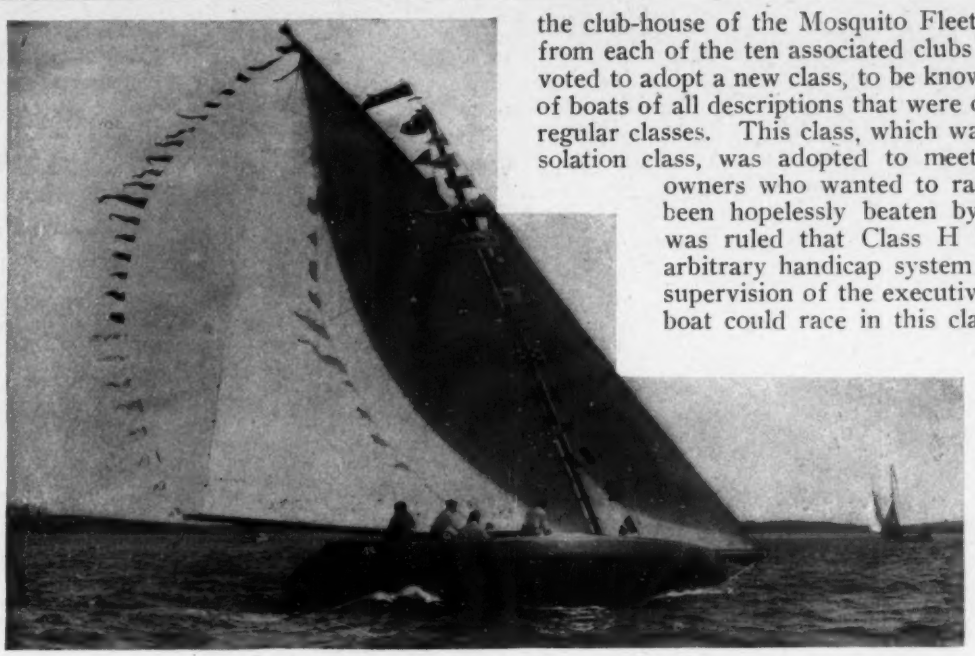
J. J. HARLAND, FAMILIARLY KNOWN AS "INTER-CLUB JACK," PRESIDENT OF THE ASSOCIATION

HOWARD GANNETT, WHO HAS WORKED HARD AND FAITHFULLY IN THE UPBUILDING OF THE INTER-CLUB

Mr. Harland, familiarly known among Massachusetts yachtsmen by the title of "Inter-Club Jack," and Mr. Campbell have served the Association as president and secretary-treasurer ever since the organization was formed, and their re-election year after year is a glowing tribute to their efficient and untiring efforts in building up the Association. Mr. Howard Gannett, who has also worked hard and faithfully in the interests of the Association, was elected as treasurer

to relieve Mr. Campbell of some of his duties. Any yachtsman that realizes the tremendous amount of unselfish labor and ceaseless energy that the officials of an organization like the Inter-Club Association must devote to their work can appreciate what a debt of gratitude Massachusetts Bay yachtsmen owe these men.

After the election of officers an executive committee was chosen consisting of the president, vice-president, secretary and treasurer, together with Cyrus K. Small and Joshua P. Holbrook.



NUTMEG, ALLEN C. JONES OWNER, CLASS A CHAMPION FOR 1912

A communication was read from the Eastern Yacht Club requesting and recommending the appointment of Professor Harold A. Everett, of the Massachusetts Institute of Technology, as the official measurer for the Association. As this was in line with the general desire of all the Massachusetts Bay yacht clubs that one official measurer be chosen to measure the racing boats, and as Professor Everett was known to be a thoroughly scientific and accurate measurer, the wishes of the Eastern Yacht Club were unanimously assented to, and Professor Everett was appointed official measurer for the season of 1912. This proved to be a very wise move, as, in place of the rather haphazard and uncertain measuring of other years, the racing yachts were held strictly to required regulations and measured in a most business-like and accurate manner.

The last action at this meeting was the unanimous election of two honorary members of the Association in recognition of their efforts to further the interests of the Association and yachting in general. The two fortunate recipients of this honor were William L. Carlton, chairman of the Regatta Committee of the Corinthian Yacht Club, and the writer.

Mr. Carlton, known affectionately to all Massachusetts yachtsmen as "Billy," is one of the most popular yachtsmen on the coast. His energetic and capable manner of handling the Corinthian Yacht Club's racing affairs has placed that club in the forefront of American yacht racing. Ever since the Inter-Club Association was formed Mr. Carlton has devoted his best efforts to the upbuilding of the organization, and considerable of its success is due to his valuable and conscientious labors.

On March 28 another meeting of the Association was held at the club-house of the Mosquito Fleet Yacht Club. Delegates from each of the ten associated clubs were present, and it was voted to adopt a new class, to be known as Class H, comprised of boats of all descriptions that were outclassed in speed in the regular classes. This class, which was in the nature of a consolation class, was adopted to meet the demands of yacht owners who wanted to race but whose boats had been hopelessly beaten by faster competitors. It was ruled that Class H boats should sail on an arbitrary handicap system under the direction and supervision of the executive committee, and that no boat could race in this class unless it was conclusively shown that she had no chance in her regular class.

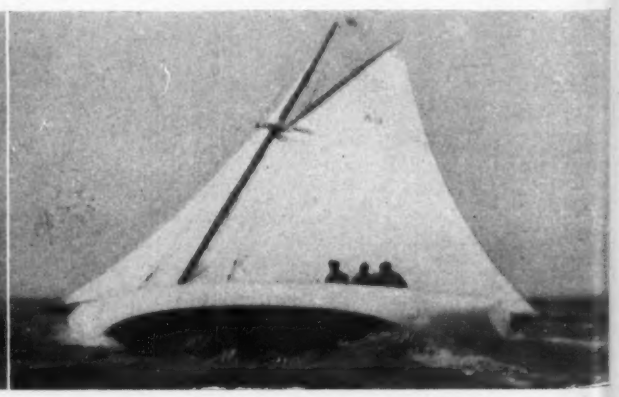
May 9 a special meeting of the Association was held to make final preparations for the season, which always starts on May 30. At this meeting it was voted to limit Class A boats to under 45 feet in length over all. This restriction was imposed in order to prevent very large boats from competing with smaller ones, and was a wise move in the direction of making close racing in the class.

On Memorial Day the racing season officially commenced with the South Boston Yacht Club regatta. A raw easterly wind, with rain and fog, failed to damper the ardor of the enthusiastic Massachusetts yachtsmen, and more than 70 boats crossed the starting line off City Point. Chief interest centered in Class A, as five boats new to the class made their first appearance. These were Norma II, owned by H. A. MacInnis; Chewink II, owned by Frizzell & Swensen; Clorinda, owned by Gillis & Irwin; Wanderer IV, owned by Dr. F. E. Dawes, and Little Haste, owned by the writer. Nutmeg, last year's champion, owned by Allen C. Jones, appeared with a new rig, carrying 1,140 square feet, an enormous sail plan for a 22-foot waterline boat. Her mast towered above her competitors'; but, as sail area is not restricted under the Association rules, Nutmeg was allowed to carry any size sail without penalty.

It was an unsatisfactory day for racing, the breeze coming in fluky slants, which spoiled the race as a true test of the boats' abilities; but it was apparent to all that Nutmeg, with her big sail plan, was easily the fastest boat of her class, and she romped across the line an easy winner. Chewink II finished second, while Norma II captured third prize. Little Haste finished fifth, Virginia beating her by the close margin of 14 sec. corrected time. Clorinda followed Little Haste, while Wanderer IV finished hopelessly behind. Little Haste, a centerboard boat, showed great bursts of speed while running and reach-

LETHE (B3) FOLLOWED BY QUAKERESS (B5) OFF MARBLEHEAD

H. LINDSAY, OLD STYLE, BUT STILL ABLE TO HOLD HER OWN



NOVICE, CLASS A RACER, UNDER DOUBLE REEFS

ing; but her short waterline length—20 feet 9 inches—and her small sail area of 900 square feet, handicapped her beating to windward against a boat with such an enormous sail spread as Nutmeg.

Class B showed up well, with eight starters. Quakeress, owned by J. W. Damerall, Jr., and Sintram, owned by O. L. Brambach, had a hot battle for first place, Quakeress winning out by seven seconds, corrected time. Chevy Chase finished third, followed by Pirate, Spook, Sentinel, Barracouta and Winona in order. Barracouta, last year's champion, made a poor showing, the course being a hard one for centerboard boats.

Class C, the topmast sloop class, brought five entries to the line. A sensation was sprung in this class by the appearance of Eleanor, a last year's Class A centerboard sloop, a small topmast being lashed to her pole mast. She did not hoist a topsail during the race, and the action of her owner, W. L. Jefferson, of the Wollaston Yacht Club, in competing in Class C with a light centerboard boat against heavy, old style competitors aroused much criticism.

H. Lindsay, the old, reliable sloop owned by Power & McCarthy, won first prize in Class C, while Eleanor finished second. Violet, the celebrated 50-year-old Herreshoff sloop, appeared with a new bow—a modern overhanging one; but, to the great disappointment of her many admirers, she made a poor showing, the new bow ploughing up the water in a discouraging manner. Lorna Doone and Thialfi beat out Violet for third and fourth places, respectively.

Class S created much interest, as three newcomers appeared—Maritza II, owned by C. H. Porter, of the Lynn Yacht Club; the sonder boat Alarm, owned by J. P. Holbrook, and the Bobolink, owned by G. L. Bean. Maritza II was designed and built by her owner. She was a good deal of a freak, with two centerboards and two rudders, and resembled a pancake in shape. The best she could do in this race was third, but she showed promise of great speed. Wawenock, owned by G. W. Sargent, took first prize, with Alarm right at her heels for second place. Zoe, Winniahdin and Bobolink finished fourth, fifth and sixth, respectively.

Class H brought five starters, but the race proved unsatisfactory, owing to a mix-up about the starting time. After considerable discussion, Zidana, owned by J. G. Homer, was given first place, and Marion III, owned by R. C. Goudey, was awarded second. Grayling, Sinbad and Eleanor S finished third, fourth and fifth.

Class D—the catboat class—brought out a fine field of eight starters. Clara, owned by H. W. Robbins, took first prize, with Dartwell, owned by Commodore I. M. Whittemore, of the Quincy Yacht Club, in second place. Dolly III, Mudjekeewis, Busy Bee, Iris, Hush and Wanderer finished respectively in the order given.

Class I—18-footers—was distinguished by the appearance of two new boats—Scaler, owned by E. W. Murphy, and Louise, owned by A. E. Whittemore. Ralph Hendrie's Cheroot sailed a good race, taking first prize, with last year's champion, Moslem II, owned by H. N. Bloomfield, second. Scaler took third prize, while Louise, Dorchen II, Acanthus and Reina brought up the rear.

Class P—the Universal Rule class—had only two starters—Wianno, owned by Arthur W. Stevens, and Amoret, owned by Commodore Charles B. Wheelock, of the Corinthian Yacht Club. Wianno surprised the spectators by handily defeating Amoret.

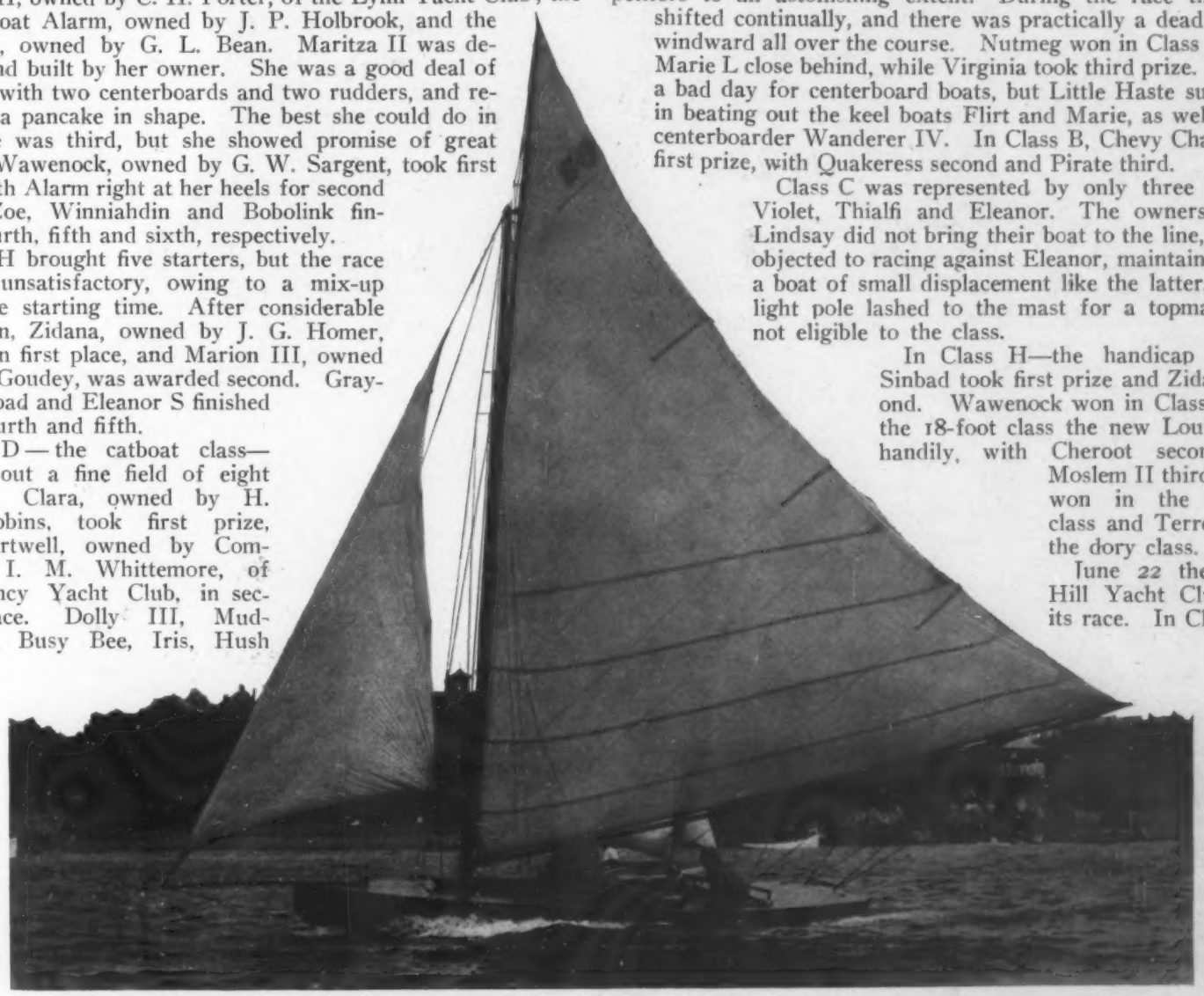
Two special classes were well filled, but the dories—Class X—had only three starters. Nine power boats in three classes sputtered around the course, but excited little interest. Massachusetts Bay sailing yachtsmen are still sceptical as to motor boat racing, and the Association gave the power boat classes as an experiment to test the amount of interest shown in them by power boat owners.

The next race was held under the auspices of the Mosquito Fleet Yacht Club on June 8, with 64 boats participating. It was probably the freakiest race ever sailed in Massachusetts Bay. In Class A, the first class to start, the boats that crossed the line in the lead carried a fresh southeasterly breeze with them. Boats that followed a few seconds later were caught in a flat calm. In a few minutes a puffy southwest wind struck the leaders, and away they romped, increasing their advantage over their less fortunate competitors to an astonishing extent. During the race the wind shifted continually, and there was practically a dead beat to windward all over the course. Nutmeg won in Class A, with Marie L close behind, while Virginia took third prize. It was a bad day for centerboard boats, but Little Haste succeeded in beating out the keel boats Flirt and Marie, as well as the centerboarder Wanderer IV. In Class B, Chevy Chase took first prize, with Quakeress second and Pirate third.

Class C was represented by only three boats—Violet, Thialfi and Eleanor. The owners of H. Lindsay did not bring their boat to the line, as they objected to racing against Eleanor, maintaining that a boat of small displacement like the latter, with a light pole lashed to the mast for a topmast, was not eligible to the class.

In Class H—the handicap class—Sinbad took first prize and Zidana second. Wawenock won in Class S. In the 18-foot class the new Louise won handily, with Cheroot second and Moslem II third. Clara won in the catboat class and Terror II in the dory class.

June 22 the Savin Hill Yacht Club held its race. In Class A a



MARITZA II, 1912 CLASS S CHAMPION. DESIGNED, BUILT AND OWNED BY C. H. PORTER, OF THE LYNN Y. C.

FIVE CLASS A BOATS IN UNUSUAL MIX-UP IN SAVIN HILL Y. C. RACE

most unusual incident occurred soon after the start, as all the six entries came together in a general mix-up. After the racers were separated, Virginia took the lead and held it to the finish, with Novice in second place.

Class B had eight starters. Lethe, a Buzzard Bay 21-footer, owned by the writer, made her first appearance. Two days after the Mosquito Fleet Y. C. regatta the writer sold Little Haste and purchased the Lethe. Lethe made an eventful trip around the Cape, encountering much bad weather, strong winds and fog, and also picking up the motor boat Naomi, in distress, off Monomoy Point, which she towed to Nauset, a distance of over 17 miles, in a heavy sea. Lethe took the lead at the start and held it over two-thirds of the course; but, running in before the wind, the breeze slackened, and Quakeress, Chevy Chase and Sintram slid past her. The other classes were well filled. Winners in their respective classes were: H. Lindsay, Class C; Maritza II, Class S; Marion III, Class H; Dartwell, Class D; Cheroot, Class I, and Elizabeth F., Class X.

BOARD OF JUDGES ON THE TORPEDO BOAT RODGERS IN SOUTH BOSTON Y. C. OCEAN RACE

July 4 the annual City of Boston regatta was held. The wind was fresh and steady from the southwest, and of the 63 boats which started every one finished—an exceptional occurrence for an open race not counting for association percentage. In Class A Clorinda and Novice furnished a thrill for the spectators who lined the shores. They crossed the line too soon, and, in coming back for a new start, narrowly escaped colliding with the rest of the class, which were tearing along at great speed. They then came within a hair's breadth of smashing into each other, and just grazed the committee boat—the city tug Cormorant.

Chewink II won in Class A, with Mignon second. Lethe won in Class B, with Winona second and Sintram third. Louise scored her second successive win in the 18-foot class and Dartwell in the catboat class. Thialfi won in Class C, Wawenock in Class S and Thordis in Class H.

Next day the Hingham Yacht Club held a race. This did not count for championship percentage, and there was no class given for A boats. Lethe romped home a winner in Class B, the heavy southwest wind which prevailed suiting her perfectly.

Maritza II beat Wawenock in a sensational race. Aurora won in Class I, with the new boat Scaler close at her heels. Dartwell beat Clara handily in the catboat class. Bessie A took first prize in the dory class, and J. J. Dyer's Mischief won in the local Hingham Yacht Club one-design class.

The following day the Squantum Yacht Club held its regatta in a smashing southwest breeze. Lethe made the fastest time over the course of all the 50 boats that started. She not only beat her own class—B—by a wide margin, but made faster time than any boat in Class A, her time being over two minutes faster than that of Nutmeg, the winner in that class. Lethe was designed by Joshua Crane, the Boston athlete, polo player and tennis champion, who, though only an amateur yacht designer, has turned out some very fast boats. Lethe's showing in this race speaks well for his work.

In Class H the little Dorsyl scored a well-deserved win. Eleanor won in Class C, Scaler in Class I, Dartwell in Class D, Maritza II in Class S and Barbara in the dory class.

July 13 the Columbia Yacht Club regatta was held, and turned out to be an unfortunate affair from a sporting point of view. Low tide at the start caused several of the keel boats to go aground, and a flat calm for the first stage of the race made things miserable for the crews of the 60 boats that participated. Finally a fresh southwest breeze swooped down without warning, and many boats were disabled. Nutmeg won, as usual, in Class A, with Virginia second. Sintram won in Class B, with Chevy Chase only five seconds behind her. Eleanor won in Class C, Sinbad in Class H, Clara in Class D, Zoe in Class S, Dorchen II in Class I and Barbara in the dory class.

On July 18 a special meeting of the Association was held to consider a formal protest against the Eleanor sailing in Class C, this protest having been referred to the Association by the board of judges of the So. Boston Y. C.

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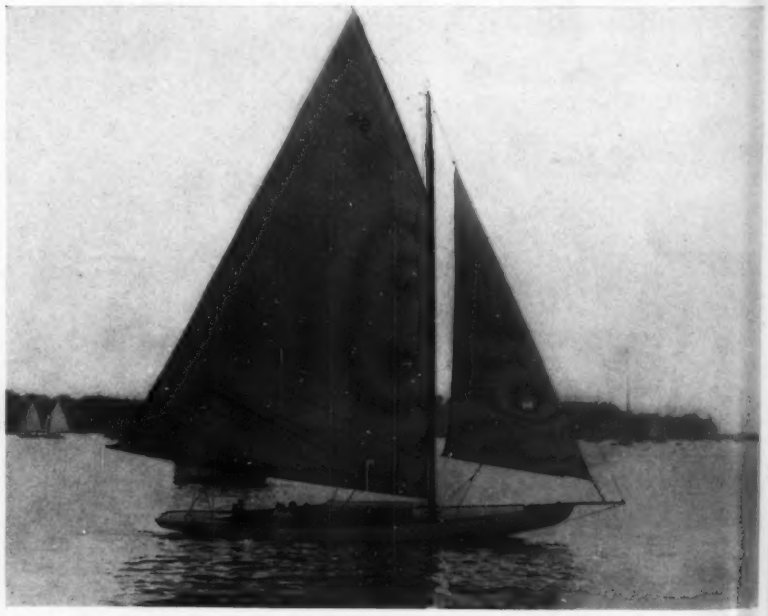


CHEVY CHASE, WINNER CORINTHIAN Y. C. MIDSUMMER SERIES, CLASS B

Twelve Months in a "Spouter"

By WALTER NOBLE BURNS

PART V.—Arctic Ocean Whaling. Escape from the Ice Pack. Home at Last

[FOREWORD.—In the previous instalments Mr. Burns has told how, after shipping as a "green hand" on board the whaling brig Alexander at San Francisco, he became infected with the spirit of discontent which was rife in the forecastle when it was learned that the regular custom on whale ships was to pay the men off at the end of the cruise with "one big iron dollar" each, while the profits of the voyage were divided up among the officers and harpooners. He was contemplating an attempt to escape ashore to the coast of Lower California, more for the adventure of the thing than through any actual sense of injury, when a surreptitious examination of a chart changed his mind by showing that there was no inhabited place within a hundred miles of arid shore. While on the sperm grounds of the Pacific, the second mate, a Cape Verde Island negro, with whom the author had been continually at swords' points, was drowned in the wreckage of a whaleboat which had been knocked to pieces by a maddened bull sperm.

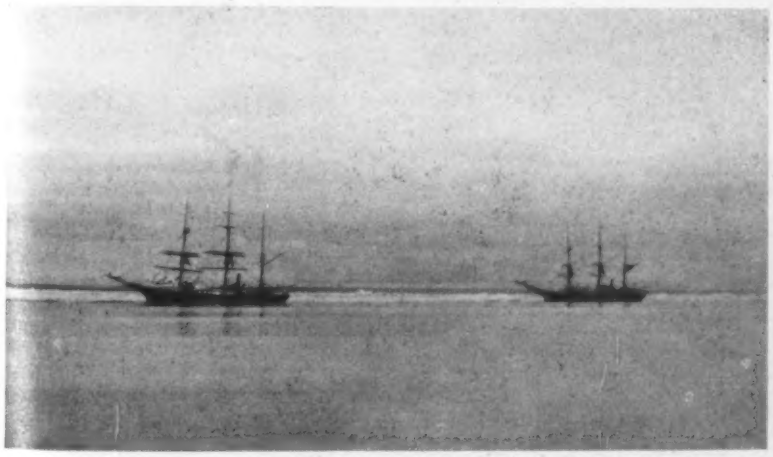
Later, while among the Hawaiian Islands, Burns got himself into a peck of trouble by two unsuccessful attempts to "jump ship," in one of which he swam for a mile in shark-infested waters before being overtaken and captured by a boat sent out from the ship. For this escapade he was kept on a bread and water diet for a week, besides being treated to a spirited harangue from the "old man"—who, however, failed signally to carry out his terrible threats against the young "greenhorn." During a gale in the North Pacific the captain was swept from his feet by a boarding sea and had his leg broken by the fall; but the ship kept on for Behring Sea under command of the mate. After being frozen in for three weeks they finally lower for a whale, which they get a harpoon into, though it gets away, only to be found floating dead the next day.

After capturing the whale and trying it out, the brig cruised on the Behring Sea grounds without success, and then touched at an Eskimo village on St. Lawrence Bay, Siberia.]

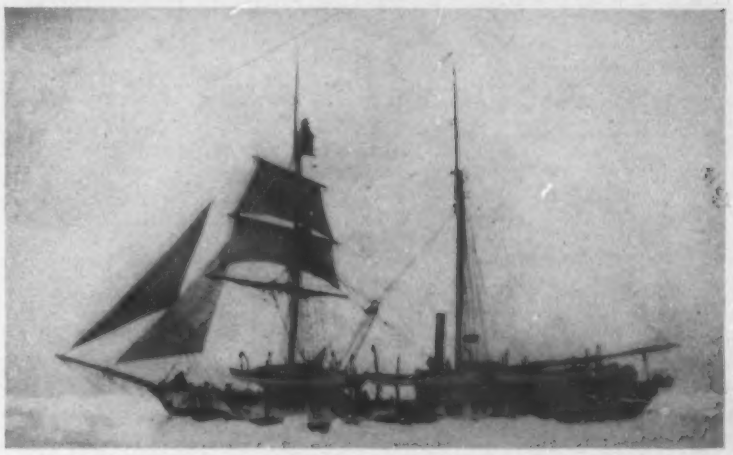
WITH the first breeze we set sail for Port Clarence, Alaska, where we were to meet the four-masted schooner Jennie, the tender from San Francisco which used to meet the whaling fleet there every summer with mail and supplies. On the way we passed just south of Behring Straits and had our first distinct glimpse of the Arctic Ocean. When we dropped anchor in the windy roadstead of Port Clarence eighteen whale ships were there ahead of us.

The land about Port Clarence was flat and covered with tall, rank grass—a region of tundra that stretched away to distant hills. The Jennie came in soon after we arrived. Boats from the whaling fleet soon were swarming around her, eager for letters and newspapers. Our captain brought back a bundle of San Francisco papers, which were sent forward after the Cabin had read them. They gave us our first inkling since leaving Honolulu of how the great world was wagging. Exiles of the sea, the news of our country seemed to have an intimate personal meaning to us which it never could have to stay-at-homes. I remember that a telegraphic brevity describing a murder in my native State seemed like a message from home.

With the Eskimos who crowded aboard us to trade was a white man dressed like an Eskimo to the last detail and looking like an Eskimo, except for a heavy beard. He had run away from a whaler three years before, and had expected to work his way to the settlements to the south, but had been unable to do so and had lived with the Eskimos. Each year when the whaling fleet



"WE FELL IN WITH THE WHALING FLEET ONE COLD, GRAY MORNING"



"OUR SIDES BECAME INCASED IN A WHITE ARMOR OF ICE"

arrived at Port Clarence he had gone from ship to ship, asking the skippers to let him work his passage back to San Francisco. But the captains would have nothing to do with him, seeking, by their refusal to take him back to civilization, to enforce a lesson against desertion. He had made his own bed, they told him coldly, and could lie in it. So for three years he had been marooned on this bleak coast, living on raw meat and nursing the hope through the long Arctic nights that some whaling skipper would relent in the spring. Upon this year's visit of the fleet the captains had proved as hard-hearted as before. Year after year he had watched the ships come in with high hopes and had watched them sail away again with a sinking heart. Our brig was one of the last vessels to clear from Port Clarence, and we left him still marooned. I never learned his fate—whether he managed, somehow, to get back home or left his bones to bleach upon the tundra.

From Port Clarence we headed back to Unalaska to ship our whalebone to San Francisco by steamer. Midway of our run down the Behring Sea a thick fog closed about us, and we kept our fog-horn booming. Soon, off our bows, we heard another fog-horn. It seemed to be coming closer. Our cooper, an old navy bugler, became suspicious. He got out his old bugle and sounded "assembly" sharply. As the first note struck into the mist the other fog-horn ceased its blowing. We did not hear it again. When the mist lifted no vessel was in sight, but the situation was clear. We had chanced upon a poaching sealer, and when she heard our cooper's bugle she concluded we were a revenue cutter and took to her heels.

A day or two later we saw the revenue cutter Corwin chasing a poacher. The sealing schooner, heeled over under crowded sail, was scurrying away before a stiff wind. The Corwin was plowing in hot pursuit, smoke pouring from her funnel and hanging thick in the wake of the chase. She was gaining steadily, for she was a steamship, and the schooner had only her sails to depend on. Finally, the revenue cutter sent a solid shot across the schooner's bows. The ball knocked up a great splash of water. But the poacher did not heave-to—just kept on her way, leaning so far over that the clews of her lower sails almost touched the waves and a big white feather of spray stood up in front of her. So pursuer and pursued passed over the horizon, and we did not see the end of the hunt. But we knew that there could be but one end. The fate of that poacher was sealed. Only a fog could save her, and the sky was clear.

We passed close to St. George Island, the southermost of the

ESKIMOS WHO CROWDED ABOARD TO TRADE IN BEHRING STRAIT

Pribilof group, the breeding place of the fur seals. As we came near the shores the air literally shook with the raucous, throbbing barks of countless seals. The din was deafening. Along the shore a shelving beach ran up to rocky declivities, and beach and rocks were packed with seals. There may have been a hundred thousand; there may have been a million; and it seemed as if every seal was barking. The water alongshore swarmed with them. Thousands of heads were sticking out of the sea. Thousands of other seals were playing, breaching out of the water like porpoises. They swam close to the brig and floated lazily on the surface, staring at us, unafraid. If we had been poachers, I should think we could have taken several hundred thousand dollars' worth of seals without difficulty.

From Unalaska, where we landed our whalebone, we headed north for the Arctic. For one day of calm we lay again off the little Eskimo village in St. Lawrence Bay and again had the natives for our guests. Then a little breeze came walking over the sea and pushed us directly northward. On August 15 we sailed through Behring Straits, and were at last in the Arctic.

The Straits are 36 miles wide, with East Cape, a rounded, dome-shaped mass of black basalt, on the Asiatic side, and on the American side Cape Prince of Wales, a headland of sharper outline, but neither so lofty nor so sheer. In between the two capes, and in line with them, lie the two islands of Big and Little Diomede. Through the three narrow channels between the capes and the islands the tide runs with the swiftness of a river current.

The Eskimos constantly cross from continent to continent in small boats. In still weather the passage can be made in a light kyak with perfect safety. The widest of the three channels is that between Big Diomede Island and East Cape, and is, I should say, not more than 15 miles across. While we were passing through the Straits we saw a party of Eskimos in a skin boat paddling leisurely across from America to Asia. They no doubt had been on a visit to relatives or friends on the neighboring continent.

The whaling fleet divided after entering the Arctic Ocean. Some of the ships went to the whaling grounds about Point Barrow and Herschel Island, far north of Behring Straits. The others bore to the westward for the fishing along the ice north of eastern Siberia. We stood to the westward. In a few days we had raised the white coasts of a continent of ice that shut in all the north as far as the eye could see and extended to the pole and far beyond. With the winds in the autumn always blowing from the northwest, the sea was perfectly calm in the lee of this indestructible polar cap. I have been out in the whale boats when they were heeled over on their beam-ends under double-reefed sails before a gale of wind upon a sea as smooth as the waters of a duck pond.

Early one calm morning all three boats lowered for a whale that was spouting a half mile or so away. There was not a breath of air stirring, and we took to the oars. The sea was like melted silver, of an oily smoothness and brightness, unbroken by a ripple. The whale went steaming majestically across our bows. We could not get to him, so we rested on our oars and watched him pass. His black and glistening head rose out of the still water about every 50 yards, and we heard the mighty breath rush from the giant lungs with a hollow sound of power as the fountain of vapor shot into the air. Finally, the whale slowed down and began swimming idly about, flapping the surface with one of its mighty fins. This is what whalers call "finning."

We bent to the oars. As we drew near the whale that monster black fin waving about in the air, hitting the water now and then with resounding smacks, looked as uncanny as if it were some devil's paw and had a frightful suggestiveness of power. When we were almost within striking distance the whale sounded. With our sweeps held in the air we sat and scanned the sea. Big Foot Louis stood tense and silent in the bow.

"Blow!" he almost whispered. The whale had broken water.

"Come on, boys," said Gabriel, our boat-header. "Now we get him. I want dat fish for our boat. Do you hear me? Pull away!"

The other two boats had seen the whale at the same time. All began rowing at once. It was a race. We pulled as we never had pulled before. As we drew close to the whale it was lying at full length upon the surface, still and resting, possibly asleep. The only sound we made was that of the sweeps moving in the locks, the splash of the oars in the sea and the whispering rush of the boat through the water.

"Stand by, Louis," said Gabriel in a hoarse whisper.

"Aye, aye, Sir," Louis whispered back.

The boatsteerer looked at his harpoon critically, balanced it in his hand, saw that the line was clear. Then we drove straight upon that island of living ebony. As we struck, Louis threw his harpoon. The spear sank into the soft, buttery mass. We heard the faint concussion of the cap of the tonite gun on the harpoon shaft, and, a fraction of a second later, the muffled explosion of the bomb in the whale's vitals.

"Stern! stern!" cried Gabriel.

We backed water as hard as we could with our oars. The great back went flashing down, the mighty tail rose directly over us, shutting out the sky. It curled over away from us and smote the sea with deafening thunder. As quick as lightning it rose into the air again, curled high above us and swept down. But we had backed just out of harm's way. Death and that terrible tail had missed us by six inches. As the tail crashed into the water it raised a wave that lifted our bow high in air. The whale had disappeared. The boat was left in a boiling pother. The line began to dance and sing, leaping up from its neatly laid coils in our tub in dizzy spirals and humming out over the bow.

IGLOO OF SIBERIAN ESKIMO

"Ha, boys," sang out Kaiuli, the Kanaka, our bow oar, "now for a fine ride behind Arctic Ocean racehorse—eh?"

Sure enough it was a fine ride—a thrilling ride. The friction of the line set the boat going. It gathered momentum. In a little while we were tearing through the sea, our bow deep in the smother as the whale pulled down upon us, flashing walls of white spray flaring out on both sides.

The other two boats pulled for where it seemed most probable the whale would rise. When it came to the surface the mate's boat was closest. Long John, the boatsteerer, tried for him when he was four seas off. It was a long dart and he missed, his harpoon falling into the sea. Again the whale dived. But before Long John had recovered his iron we had shot past the mate's boat. When next the whale rose we were almost upon him. A few powerful strokes of the oars and our prow bumped out of the water upon his body. Big Foot Louis' second harpoon went crashing into the black back. The second bomb sounded dully in its vitals. A great shudder seized the monster. The water foamed white with its throes. Then everything grew still. Slowly the great body rolled over.

The mate's boat rushed up. It could not be stopped, and its keel glanced up on the whale's white belly. Big John had his harpoon poised, but did not throw it. The whale was dead. We had won the chase.

Big Foot Louis danced up and down in the bow of the boat, raising his knees high in a sort of joyful cake-walk. Gabriel waived his hat.

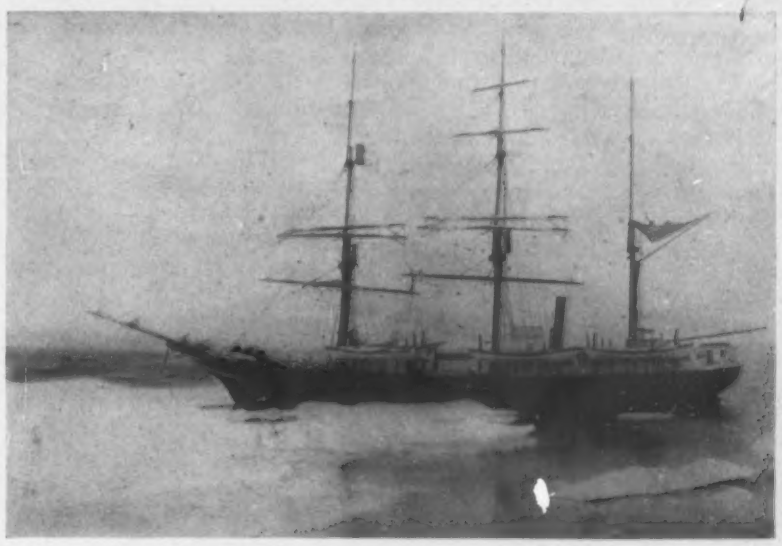
"By golly!" he shouted. "Dat's our fish. We win dat race. It takes old Gabriel to kill the whale. By golly!"

When we got back to the brig we looked like snow-powdered Santa Clauses. The spray kicked up on our ride behind our Arctic racehorse had wet us from head to foot, and, freezing as it fell upon our skin clothes, had frosted us all over with fine white ice.

We were cruising in the Arctic until the middle of October, but the lowest temperature we encountered was 10 degrees below zero. Such a temperature seems colder at sea than on land. Greater dampness has something to do with this, but imagination plays its part. There is something in the very look of a winter sea, yeasty under the north wind and filled with snowy floes and icebergs that seems to congeal the marrow in one's bones. In the cold snaps, when a big wave curled over the brig's bows, I have seen it break and strike upon the deck in the form of hundreds of ice pellets. Almost every day when it was rough the old Arctic played marbles with us.

What with the mists, the cold rains, the sleets and snows and flying spray, the brig was soon a mass of ice. The sides became encased in a white armor of ice, which at the bows was several

HOISTING UPPER JAW OF BOW-HEAD WHALE ON DECK



"FAST IN THE GREAT POLAR PACK"

feet thick. We had frequently to knock it off. The decks were sheeted with ice, the masts and spars were glazed with it; the shrouds, stays and every rope were coated with ice; the yard-arms and foot-ropes were hung with ice stalactites. One of the most beautiful sights I ever saw at sea was the whaling fleet when we fell in with it one cold, gray morning. The frost had laid its white witchery upon the other ships, as it had upon the brig, and they glided through the black seas, pallid, shimmering and phantomlike in their ice armor—an armada of ghostly Flying Dutchmen.

The brig was constantly tacking and wearing on the whaling grounds, and there was considerable work to be done aloft. By the captain's orders we did such work with our mittens off. Hauling bare-handed on ropes of solid ice was painful labor, and "Belay all!" often came like a benediction to souls in torment. Then we had much ado whipping our hands against our sides to restore the circulation. After Big Foot Louis had frozen a finger the captain permitted us to keep our mittens on.

Work aloft under such conditions was dangerous. Our walrus-hide boots were heelless and extremely slippery, and our footing on the foot-ropes was precarious. We had to depend as much upon our hands as upon our feet to keep from falling when strung out for reefing along the topsail yard. Many were the slips and hair-breadth escapes. It seems now, on looking back on it, almost miraculous that some of us green hands did not tumble to our deaths.

We saw whales frequently now. Sometimes the boats were lowered half a dozen times a day. Often we spent whole days in the boats, and even in our skin clothes it was freezing business sitting still on the gunwale of a beam-ended boat driving along at thrilling speed in the teeth of an Arctic gale. Our skipper was a good gambler, and he lowered whenever there was an off chance to bag a leviathan.

As we worked to the westward twin peaks rose out of the sea ahead of us. Covered with snow and ice, they stood out against the sky as white as marble. It was our first glimpse of Herald Island, in latitude 71 degrees North. We sailed north of the island and close to it. It looked forbiddingly desolate. Along the shores there was a rampart of black rock. Nowhere else was a glimpse of earth or herbage of any sort. The island was a gleaming white mass of snow and ice from the dark sea to the tips of the twin mountains. It was discovered in 1849 by Captain Kellett, of the English ship Herald, and named after his vessel. Captain De Long, leader of the ill-fated Jeanette Expedition, was frozen in close to the island in the winter of 1880. He found polar bear plentiful and trapped and shot a number.

Here at Herald Island we fell in with 18 ships of the whaling fleet—all that had cruised to the westward; and it was only by good luck that some of them did not leave their hulks on those

desolate shores. The polar pack rested solidly against the island's western end and curved in a great half-moon to the north and east. The pocket thus formed between the island and the ice looked good for whales, and the ships hunted it out carefully. Far to the eastward a long arm of ice reached out from the pack and grasped the island's eastern end. This arm was, perhaps, a mile wide. It barred our passage back to the open sea. The ships had been caught in a trap. They were bottled up in a hole of water perhaps a hundred square miles in extent. Busy on the lookout for whales, the captains of the fleet did not realize the situation for several hours. When they discovered their predicament they hurried to the crows'-nests with glasses to try to spy out an avenue of escape. Sail was cracked on. The ships began to fly about like panic-stricken living creatures.

The great polar pack was pressing rapidly towards the island. Unless the ships escaped it seemed likely they would be caught before night. In this event, if they escaped wreck by ice pressure they faced the prospect of lying still in an ice bed until the pack broke up in the spring. All day long the frightened ships scurried up and down the ice barrier without finding an opening. They ran to the westward. There was no escape there. They flew back to the east. An ice wall confronted them in that direction. The case seemed hopeless. The panic of the captains became more evident. If a ship hurried off in any direction, other ships flocked after like so many scared sheep. Morning and afternoon passed in this wild search for an outlet. Night was coming on.

A bark squared her yards and shot away to the southeast. It was the Sea Breeze. When the others expected her to tack she did no such thing, but kept going straight ahead. On she went alone far away from the fleet. It was exciting to watch that single ship flying eastward. What could it mean? Had she found an opening? The other ships turned their prows after her, one by one. A long line of vessels soon was careering in the wake of the Sea Breeze. She had dwindled to a little ship in the far distance when at last we saw her break out the American colors at her mizzen peak. Every man aboard the brig gave a cheer. Cheers from the other ships came across the water. It meant that the Sea Breeze was clear.

She had found a lead that suddenly had opened through the eastern ice strip, as leads will open in drifting floes. The lead was not entirely clear. A narrow strip of ice lay across it. The Sea Breeze butted through this strip and sailed on to freedom. Our brig was the tenth vessel to pass through. As we negotiated the narrow passage the ice was so close on both sides we could have leaped upon it from the bulwarks. It was with a joyous sense of escape that we cleared the pack and swung once more on the open sea. Soon after the last ship of the fleet had bumped her way to safety the ice closed solidly behind.

Soon after escaping from the ice trap at Herald Island we took our third whale. It was seen swimming slowly across our lee beam. All three boats lowered; but the mate's boat, being on the same side of the vessel as the whale, had the start of the other two. The whale sounded when the mate was almost upon it, but swam only a little way beneath the surface, leaving in its wake a broad path of foam spots and bubbles.

Along this path the mate steered his boat as along a broad highway. There was a spanking breeze blowing, and the boat was able to sail as swiftly as the whale was swimming. The roadway of bubbles curved and zigzagged, but the mate managed to follow it perhaps a half mile as a hound might follow the trail of some wild animal. When, unconscious of its silent pursuer, the whale rose to blow again, the mate was upon it. A single bomb from Long John's harpoon killed it, and it died almost without a flurry and rolled belly up. It was the quickest and least exciting of our catches.

Our fourth whale gave us more trouble. We sighted this fellow spouting in a choppy sea among ice islands drifting two or three miles off the edges of the polar cap. All three boats lowered. My boat struck the whale. That it was wounded seriously, if not mortally, was indicated by the blood-tinged fountains it blew into the air. But for all its injury, it ran out our tub of line before another boat could reach us. The whale's fountains led toward a long, narrow floe. We expected it to dive under this and go on for the main pack. To our surprise, a little later we saw fountain after fountain, red with blood, shoot up from a small hole in the center of the floe. The whale evidently was badly hurt, and perhaps believed it had found a refuge from its pursuers beneath the ice.

Men were landed hurriedly on the ice with harpoons and shoulder guns, while enough sailors were left in the boats to keep them clear of the floe. The landing parties clambered over the broken and tumbled ice, dragging their harpoon lines. We found the whale about half exposed in a narrow opening. Big Foot Louis, Long John and Little Johnny, the boatsteerers, darted their harpoons into its body, sending tonite bombs into its vitals. Louis' harpoon barely struck the whale, sinking glancingly into the side. This was the only harpoon Louis had left. The other two boatsteerers had two each; and soon the whale, with the harpoons sticking all over it, suggested a baited bull in a Spanish ring hung with the darts of the banderilleros. But the great animal kept on breathing blood and would not die. It lay in a difficult position for the boatsteerers to reach a vital spot with their irons. After the supply of harpoons had been exhausted, shoulder guns were brought into play. In all, twelve tonite bombs were fired into it before the monster gave a mighty shiver and lay still.

But with the whale dead we still had a big problem on our hands. The giant bulk in some way had to be hauled out of the ice. This was a difficult matter, even with plenty of time in which to essay it. Night was now coming on, and it was the brig's custom in the hours of darkness to sail far away from the great ice pack with its edging of floating bergs and floes in order to avoid possible accident, and to sail back to the whaling grounds on the morrow. This Captain Shorey prepared to do now. As a solution of the dilemma, an empty bread cask or hogshead was brought on deck and the name of the brig was burned in its staves in several places. This cask was towed to the floe, hauled up on the edge of the ice, and the long line of one of the harpoons sticking in the whale was made fast to it by means of staples. Thus the cask marked the floe in which the whale was lying. If a heavy sea should break up the ice, the great barrel floating on the sea might still enable the brig to find the carcass.

It was growing dark when the brig went about, said good-night to the whale and headed for open water to the south. We sailed away before a stiff breeze, and soon cask and floe and the great white continent beyond had faded from view. When morning broke we were bowling along under light sail in a choppy sea with nothing but water to be seen in any direction. The great ice cap was somewhere out of sight over the world's northern rim. Not a floe, a berg, or the smallest white chunk of ice floated anywhere in the purple sphere of sea ringed by the wide horizon. Being a green hand, I said to myself, "Good-bye, Mr. Whale; we certainly have seen the last we'll ever see of you."

Let me make the situation perfectly clear. Our whale was drifting somewhere about the Arctic Ocean embedded in an ice floe scarcely to be distinguished from a thousand other floes except by a cask upon its margin, which, at a distance of a few miles, would hardly be visible through strong marine glasses. The floe, remember, was not a stationary object whose longitude and latitude could be reckoned, certainly, but was being tossed about by the sea and driven by the winds and ocean currents. The brig, on the other hand, had been sailing on the wind without a set course. It had been tacking and wearing from time to time. It, too, had felt the compulsion of the waves and currents. So throughout the night the brig had sailed at random, and 20 miles or so away the whale in its floe had been drifting at random. Now how were we ever going to find our whale again? This struck me that morning on the open sea with neither whale nor ice in sight as a problem certainly very nice, if not hopeless. The way it was solved was as pretty a feat of navigation as I ever saw.

When Captain Shorey came on deck after breakfast he "shot the sun" through his sextant and went below to make his calcula-

tions. In a little while he came on deck and stepped to the man at the wheel. The helmsman was steering full and by.

"How do you head?" asked Captain Shorey.

"Northwest," answered the helmsman.

"Keep her northwest by west, half west," said the Captain.

For an hour the brig sailed steadily upon this course. Along about nine o'clock we saw the peculiar light, cold look above the sky line ahead which meant ice and which sailors call an "ice horizon." It is to be distinguished at a glance from water horizon, which is dark. A little later we sighted the white loom of the great ice continent. Later still we picked up the bergs, floes, islands and chunks of ice that drift forever along its edge.

The brig sailed on. A floe of ice, looking at a distance like a long, narrow white ribbon, lay ahead of us, apparently directly across our course. As we drew nearer we began to make out dimly a certain dark speck upon the edge of the ice. This dark speck gradually assumed definiteness. It was our cask. We were headed straight for it. To a landlubber, unacquainted with the mysteries of navigation, this incident may seem almost unbelievable; but upon my honest word it is true to the last detail.

After the brig had been laid aback near the ice a hole was cut in the bow of the whale's head and a cable was passed through it, the other end of which was made fast aboard the brig. Then under light sail the brig began the work of pulling the whale out of the ice. The light breeze fell away, and the three boats were strung out ahead of the brig and lent assistance with the oars. It was slow work. But when the breeze freshened the ice began to give, then to open up, and finally the whale was hauled clear and drawn alongside for cutting in.

It was on October 10 that we broke out the Stars and Stripes at our main gaff and squared our yards for home. Everybody cheered as the flag went fluttering up, for everybody was glad that the end of the long, hard voyage was in sight. Behring Straits, which, when we were about to enter the Arctic Ocean—sea of tragedy and graveyard of so many brave men and tall ships—had looked like the portals of Inferno, now seemed, when we were homeward bound, like the gateway to the Happy Isles. A little south of King's Island the skipper set a course for Unimak Pass. We ran down Behring Sea with a gale of wind sweeping us before it and great billows bearing us along. When we bore up for the dangerous passage which had given us such a scare in the spring we were headed straight for it, and we went through into the Pacific without pulling a rope. It was another remarkable example of the navigating skill of whaling captains. We had aimed at Unimak Pass when 700 miles away and had scored a bull's-eye.

Again the "roaring forties" lived up to their name and buffeted us with gale and storm. The first land we sighted after leaving the Fox Islands was the wooded hills of northern California. I shall never forget how beautiful those hills appeared and what a welcome they seemed to hold out. They were my own country again, the United States—home. My eyes grew misty as I gazed at them, and I felt much as a small boy might feel who, after long absence, sees his mother open her arms to him. The tug that picked us up at Golden Gate at sundown one day seemed like a long-lost friend. It was long after darkness had fallen that it towed us into San Francisco harbor, past the darkly frowning Presidio and the twinkling lights of Telegraph Hill to an anchorage abreast the city, brilliantly lighted and glowing like fairyland. I never in my life heard sweeter music than the rattle and clank of the anchor chain as the great anchor plunged into the bay and sank to its grip in good American soil once more.

My whaling voyage was over. It was an adventure out of the ordinary, an experience informing, interesting, health-giving and perhaps worth while. I have never regretted it. But I wouldn't do it again for ten thousand dollars.

THE END.

How to Build a Cabin on an Open Motor Boat

An Easy Method of Converting an Open Boat into a Snug Cabin Cruiser

By Special Arrangement with Our English Contemporary, *Motor Ship and Motor Boat*

MANY of those who have owned and used an open motor launch during the past season will contemplate the possession of a cabin launch or small motor yacht for next year. In cases where expense is of no consideration, the wish may, of course, be gratified in the simplest possible manner by the purchase of a new boat provided with the requisite accommodation. Many open and half-decked boats, however, of from 20 feet upwards in length, with good beam, are capable of being converted into excellent small week-end cruisers by the simple addition of a fore cabin. In deciding whether a launch is suitable to carry a fore cabin, the following points should be carefully considered: First, if she is already "down by the head," the additional weight forward will not improve matters; secondly, if the engine is very far forward, it will be necessary to move it further aft in order to clear the cabin; and thirdly, the depth from floorboards to gunwale should in no case be less than 3 feet where a cabin with only 4 feet 6 inches headroom is required, or less than 4 feet 6 inches where a cabin with standing headroom is proposed. Lastly, very "crank"

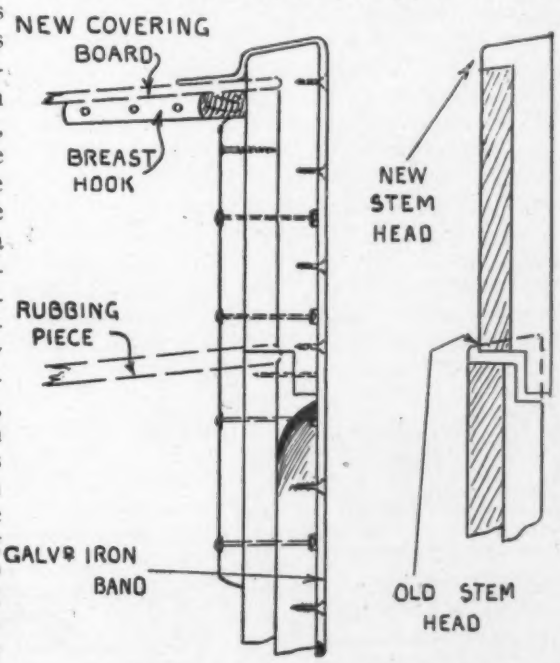


FIG. 1.—METHOD OF BUILDING UP THE STEM

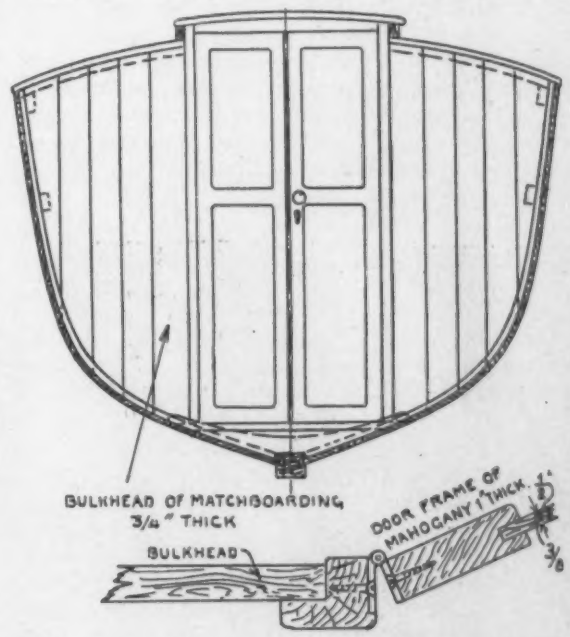


FIG. 2.—AFTER BULKHEAD OF CABIN AND DETAILS OF DOOR FRAME

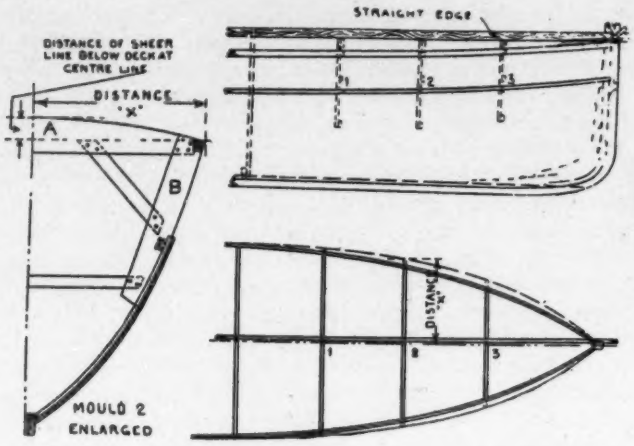


FIG. 3.—THE THREE CABIN MOLDS, SHOWING METHOD OF CONSTRUCTION

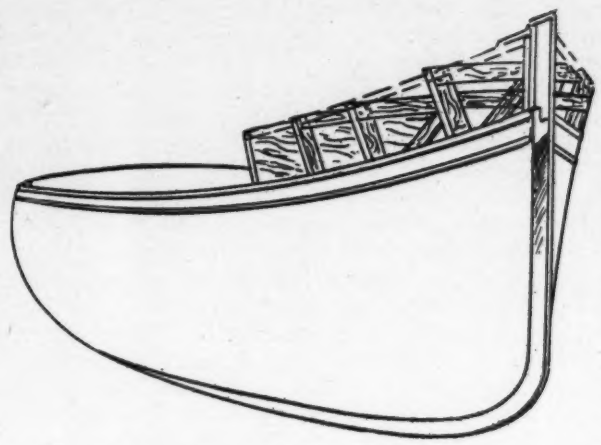


FIG. 5.—THE MOLDS SET UP READY FOR PLANKING

boats are not suitable for conversion, as the additional top weight may prove dangerous.

Other points to be remembered in connection with the design of a fore cabin are that transom berths must not be less than 6 feet in length, and are much better if made 6 feet 6 inches long; that good locker space must be provided, and that it is very convenient to have a compartment capable of containing a bag or two and other luggage. We will now assume that it has been decided to convert an open launch of 25 feet in length, with 6 feet beam, into a small cabin cruiser by the addition of a fore cabin. The engine, we will assume, is placed slightly aft of amidships. In such a case it will be most convenient to make the cabin short enough to leave a clearance all round the engine. The position of the cabin bulkhead, therefore, will be some 2 feet forward of the starting handle, assuming the latter to be at the forward end of the engine. This means that the bulkhead must be placed about 10 feet aft of the stem, giving a cabin of, say, 7 feet in length. There should, therefore, be room for two transom berths placed about 15 inches above the cabin floor. Assuming the boat's depth to be about 3 feet moulded, raised cabin sides of about 12 inches above the gunwale, together with a cambered deck, should give a clear headroom under beams of about 4 feet 6 inches. The space forward of the cabin, 3 feet in length, which should be terminated by a bulkhead, may be used for a cooking stove or for stowage of luggage, while a portion must be used as a chain locker.

Most launches are provided with short decks at the ends, and, as a preliminary step, it will be necessary to remove the forward deck. This is best done by taking a saw and making a cut around each side near to the deck shelf or gunwale, as the case may be. The remaining pieces of the covering board may then easily be removed, also the ends of the original deck beams. When this is done, the forward end of the boat will be stripped of everything except planking, timbers, gunwale or deck shelf, and perhaps an outside rubbing piece, which could be left in place if not located at the upper edge of the top strake. In removing the deck the stem band also should be removed, and the stem may then be cut off flush with the top of the sheer strake.

The kind of fore cabin we are now describing is formed by building up the top sides of the boat and laying a deck, which forms the cabin roof. It is obviously necessary to build up the top sides in a fair curve with the existing sheer strake and adjacent plans, and, in order to carry this out, it is necessary to resort to some kind of framing to give the correct shape. To do this, first build up the stem to the required height by the method shown in Fig. 1

A new straight-grained piece of oak is cut to the sectional shape of the existing stem, and its lower end is halved to fit a similar cut in the stem proper. An apron is then cut to serve as a strap between the two pieces, and a new stem band, carried over the new stem head, forms a forward tie. The apron and two stem pieces are held together by pieces of ¼-inch copper rod clenched on washers at each end, while screws hold the stem band in place. The rabbet cut each side in the new stem piece for the planking must, of course, be similar to the existing rabbet in the old stem.

Next make the after-cabin bulkhead, which may consist of pine, cedar or mahogany, about ⅞ inch thick. Fig. 2 shows the method of constructing it, and the method of fitting it to the shell of the boat is now so well known that it is unnecessary to repeat the instructions. The sides of the bulkhead above the top strake should be continued upwards in a fair curve with the section of the boat at that part, and the amount of crown for the deck or cabin roof must be decided by the shape given to the top. When this bulkhead is erected, a straight edge running from the bulkhead top at the center line to the stem will give the center line of deck. In cases where great crown is given, this line is sometimes in the form of a curve running down to the stem. More headroom is, of course, gained thereby; but the appearance of the boat is rather heavier than in the case where a straight top is adopted.

In some cases it is good practice to fit an elliptical cabin top in place of an ordinary crowned deck, but such should be very carefully designed.

To complete the framing it will be necessary to fit three moulds in place temporarily. These may be made as shown in Fig. 3, and should be constructed in the following order: First, the side pieces may be made, using ¾-inch soft wood. They should be fitted in place separately, each forming a continuation of the section upwards, and should be made too long at first, and afterwards shortened as may be found necessary. The beam mould (*A*) is in each case a segment of a circle. When each beam mould is brought into position under the straight edge, the ends, when sufficiently wide apart to meet the side moulds (*B*), will, of course,

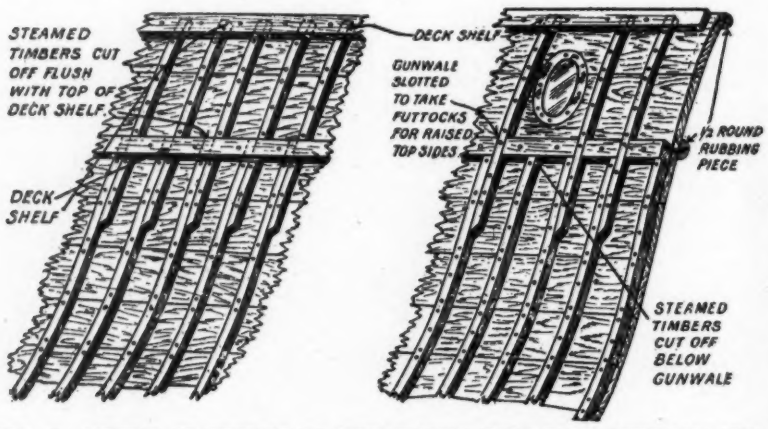

STEAMED TIMBERS CUT OFF FLUSH WITH TOP OF DECK SHELF
DECK SHELF
DECK SHELF
GUNWALE SLOTTED TO TAKE FUTTOCKS FOR RAISED TOP SIDES
½ ROUND RUBBING PIECE
STEAMED TIMBERS CUT OFF BELOW GUNWALE

FIG. 4.—METHOD OF PUTTING IN NEW FRAMES WITH BOTH GUNWALE AND DECK-SHELF CONSTRUCTION

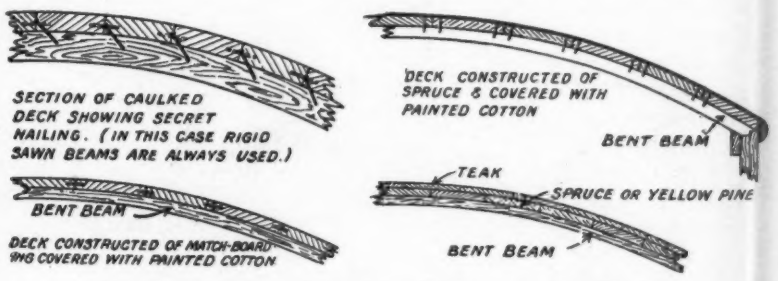

SECTION OF CAULKED DECK SHOWING SECRET NAILING. (IN THIS CASE RIGID SAWN BEAMS ARE ALWAYS USED.)
BENT BEAM
DECK CONSTRUCTED OF MATCH-BOARDING COVERED WITH PAINTED COTTON
DECK CONSTRUCTED OF SPRUCE & COVERED WITH PAINTED COTTON
BENT BEAM
TEAK
SPRUCE OR YELLOW PINE
BENT BEAM

FIG. 6.—METHODS OF PLANKING THE CABIN ROOF OR DECK

show a certain amount of drop from the center line. This drop will give the amount of dip required by the new gunwale or deck shelf to produce a fair curve from the stem to the bulkhead. Unless this method of carrying out the deck crown is adopted, it is impossible to get the deck perfectly fair. As shown in the sketch, gusset pieces are worked at the corners, connecting pieces *A* and *B*, and cross-ties hold the lower ends of the pieces *B* together. Three such moulds are sufficient to frame up a cabin of the length named.

It will have been noted that we have repeatedly used the expressions deck shelf or gunwale. The two arrangements are somewhat dissimilar, and call for slightly different treatment in our operation of extending the top sides. Fig. 4 shows the method of fitting extra timbers to support the new top sides in both cases. It will be noticed that in the right-hand sketch the gunwale arrangement is used, in which the ordinary timbers are cut off flush below the gunwale. This is adopted in boats having no waterway all round. In the left-hand sketch a deck shelf fitted inside the timbers replaces the gunwale, which method is used when a deck is fitted. Both arrangements are common, and in the former the simplest method of fitting extra timbers is to slot the gunwale, placing them in the manner shown, while with the latter method a still better job can be made by simply fitting overlapping timbers or "futtocks," as they should more correctly be termed, leaving the deck shelf intact.

Slotting the gunwale, although it almost completely destroys its value as a longitudinal stiffener, is not in this case a serious matter, for it is quite convenient to fit a large, half-round rubbing piece over the seam between the new planking and the original top strake, which in itself provides sufficient stiffening. Either the gunwale or shelf arrangement may be adopted at the new sheer line; the deck shelf, of course, gives a better hold for the beam ends, and is to be preferred on this account where a deck is fitted. Where thin planking is employed, the gunwale method is better.

When the moulds are all up in place their curvature, both at the sides and on the deck, must be carefully checked by means of longitudinal strips of ash or teak sprung all around on either side and also on the top, any unfairness being corrected by shaving off or by packing. When everything is perfectly fair, the side planking should be put on. In cases where the boat has very great flam, or hollow bow sections, it will be difficult to make the top sides in one piece, while frequently it is difficult to get broad enough planks to do this in any case. We will assume, therefore, that the sides are built up in two or more planks.

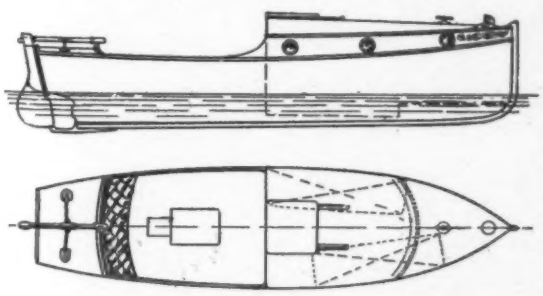


FIG. 8.—A 20-FOOT BY 5-FOOT LAUNCH FITTED WITH FORWARD CABIN. THIS IS ABOUT THE SMALLEST OPEN LAUNCH IN WHICH THE CHANGE CAN BE MADE

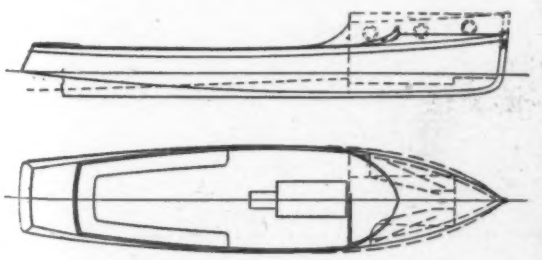


FIG. 9.—A 30-FOOT BY 7-FOOT 6-INCH LAUNCH FITTED WITH SMALL FORWARD CABIN

If the boat is painted up to the gunwale, a very smart appearance is gained by making the top sides of cedar or mahogany, and finishing them off with bright varnish work. The planking should present no difficulty whatever. The first plank simply rests on the original top strake, whose upper edge has been planed square to the flat side of the plank. It is advisable to make the inside edges a little tighter fit than the outside, so that a thread or two of caulking cotton can be driven in afterwards. A little care must be used in cutting the lower edge of the new plank, so that when bent round it will form a tight fit with the top strake. This, however, is very easily accomplished by clamping the plank in place so that it overlaps the top strake, and drawing a pencil along the upper edge of the latter, afterwards shaving the lower edge of the new plank up to this pencil-line.

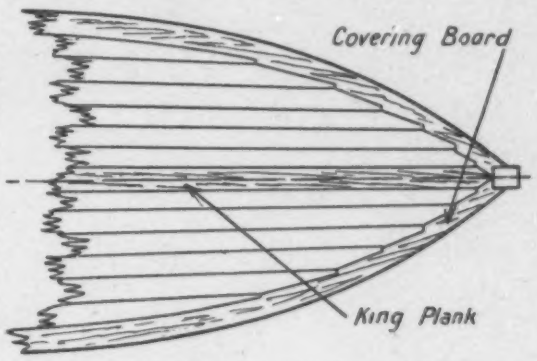


FIG. 7.—PLAN OF DECK PLANKING

The upper edge of the new plank should reach half-way between the new sheer line and the top edge of the old top strake, and the breadth can easily be set off by first subdividing this distance at each of the moulds, and, while the plank is held in place, marking off with a pencil spots from each mould. Fasten the first of the two new planks securely to the rabbet in the stem and the after bulkhead and lightly to the middle mould. The second plank may be treated in a similar manner, its upper edge, however, being beveled in accordance with the curvature of the beam moulds.

When the new planks are in place the extension timbers may be fitted and fastened to planking. Use American elm, of same scantling as the ordinary steamed timbers, and supposing that they are to be fitted inside the new deck shelf, they should be carried right up to the new sheer line, the deck shelf being afterwards fastened in place inside them. With the other method they should also be fitted in place first, their heads being subsequently cut off at a distance below the sheer line sufficient for the new gunwale to be fitted. Before the deck is commenced, the gunwale, or deck shelf, as the case may be, is fastened in place. In order to do this it will obviously be necessary to remove the moulds. The gunwale should be securely fastened to the new planking by clenched nails, and should be joined at the forward end by means of a breast hook, which is an oak crook ground to shape. The new gunwales should stop at the forward side of the after bulkhead, to which they should be connected by a short oak crook on each side, placed horizontally.

We next come to the question of laying the deck. Several methods may be employed, probably the easiest being to build a spruce deck, which is afterwards covered with painted canvas. This method has much to recommend it, for a deck thus constructed can be made absolutely watertight, and is unaffected by variations in temperature. The simplest form of deck is what is known as the laid-and-caulked type, which consists, as its name implies, of narrow planks, whose seams are caulked with cotton, afterwards being "payed" with Jeffery's marine glue. The planking is usually attached to the beams by what is called invisible nailing, a method illustrated in Fig. 6. Best selected yellow or Kauri pine may be used for deck planking. Decks of this kind are usually laid on sawn beams, and should be of sufficient strength to be perfectly rigid at all times, otherwise the caulking works loose and will cause leakage.

The canvas-covered deck is made by simply laying match-boarding over the moulds, afterwards putting American elm or ash beams into place underneath. These can be through-fastened by clenched copper nails, whose points are driven well into the wood, and the cotton can be stretched tightly over the top, hiding all minor defects and making a watertight job. A half-round rubbing piece around either side keeps the canvas tightly stretched and hides the edges. When painted, after having been put on, it contracts slightly, becoming tight and forming a very neat job.

(Continued on page 146)

From Nassau to New York in an Auxiliary Catboat

PART III.—From the Georgia and South Carolina Coasts Northward

By ALFRED JOHNSON

WADE POINT LIGHT, ALBEMARLE SOUND

AT 5 A. M., April 12, we left Mayport, Fla., being waved off with newspapers and red table cloth by Capt. and Mrs. D——, and others from headquarters of the St. John's Bar Pilots' Association. All that day we ran along up the Georgia coast under power only, and with sail furled. On deck it was warm and sunny. West of us, in the hazy distance, was faintly outlined a long, low strip of reddish-yellow sand with a fringe of greenery hanging over it, and on all the other three cardinal points of the compass the delicate blue of the ocean stretched away into invisible space. Not a sail or sign of life was to be seen, and not a sound to be heard save the regular churning and chug, chugging of our engine and the metallic click of its make-and-break sparking device. I knew its every sound by this time, and could locate by ear its common troubles as quickly as the leader of a symphony orchestra detects a discord.

This day the old machine, as if glad of this "good chance" to run towards home, worked more steadily and sweetly and in better time than on any previous day of our trip.

The islands off the Georgia and South Carolina coasts, on which the renowned sea cotton grows, though passed only at a distance, were objects of interest to me. Still farther up the coast the islands in Beaufort Harbor and south and north of it, over which herds of half wild horses rove, were skirted close at hand. These marsh or bank ponies, as they are called locally, are rounded up and branded from time to time, as on the plains, and belong to various persons, though they rove absolutely at large, going even from one island to another. I was very fortunate in seeing a troop of perhaps fifty of them dashing through the flying spray in the sunlight early one spring morning, from a small, flat, grass-covered island over a partially submerged bar to the main land.

Off Port Royal and St. Helena Sounds, S. C., we had one of our closest calls while trying to get to Charleston, after being at sea two days and a night from Mayport. Owing to our compass error—the instrument being affected by the proximity to the engine, as I have already explained—we were 20 miles out of our reckoning, and when we made land at daylight I had no means of telling where we were in the mist of a stormy day. These low shores all look alike at any time, especially to a stranger; but in cloudy or hazy weather they are hopeless. And on this coast it is impossible to approach them closely enough to

ON CHURCH FLATS, NEAR CHARLESTON, S. C.

recognize the few landmarks that do exist. The dangerous shoals make out for seven miles from shore, and if one is swamped here there is no hope of swimming to land. In fact, I imagine there is no more dangerous place on our Atlantic seaboard. Cape Cod is bad enough, but "the Cape" is well provided with every aid to navigation known to science, and fully manned life-saving stations are always on the alert to help one out of trouble; moreover, there is a constant procession of ships to follow over Nantucket shoals if you miss your way. But on this early spring morning when we struck those Carolina shoals south of Charleston not a landmark, not an aid to navigation, not a ship of any kind did we see, nor did any show itself during the entire rainy, misty, stormy day from daylight to dusk.

We floundered around on the edge of the shoals, to enter which meant disaster; yet, swept by stray currents, we were scarcely able to keep off them against the constantly freshening "on shore" breeze with engine going full speed and three reefs down. A larger and more powerful boat would have worked to windward and fought her way clear of this lee shore comfortably under storm trysail and staysail. Myrtle simply could not do it under any sail she could spread and carry. She wasn't long-legged enough to work out to windward.

I thought we were in for it towards night of that stormy, gloomy 13th of April. I had been straining my eyes all day for a sea buoy, of which there are several out among the breakers off this coast to mark possible passages over the shoals. At two o'clock

POWER BOAT MADELINE, WHICH WE MET AT YOUNG'S ISLAND

THREE GENERATIONS OF DISMAL SWAMPERS

THE PICTURESQUE CHARLESTON YACHT CLUB
(In center where flag is flying.)

THE BATTERY AT CHARLESTON, LOOKING TOWARDS FORT SUMTER

we were forced in among them and felt our way behind breaking bars of tumbling water, sounding constantly for deepening water with a codline and 10-foot pole. By reason of our experience on Florida bars, and by noting constantly the spots where the water was less roiled and working the boat into them, by coaxing and holding her up in the lulls of the wind we managed to get clear of the alternating feather-white and turbid water by 3:20 P. M. By four o'clock we were skimping off toward it again.

I dove below into the stifling, stuffy, closed-up cabin, which, together with the pitching, made me nearly seasick, and there, by the light of the little, stinking cabin lamp, I read the Coast Pilot and studied charts, tide tables, etc., until I had a picture of the coast in my mind, with every contour, sandbar, spit and channel buoy, as clearly marked on it as if I were looking at a model of it under a glass case. Then I went on deck, told Charlie to keep her off and let her skirt the edges of the shoals as long as she would without striking and rolling over. For half an hour we sped on before the increasing gale. I clung to the mast and strained my eyes until they ached, noting every change in the contour of the low, dark strip of land seven miles away. At last I found what I wanted—a faint, hardly perceptible blue streak in the dark sky line, and, farther on, another wider one, two openings which marked the two sides of a promontory or an island But which was it? That was the vital question.

To make a long story short, I got the boat so placed that what I was looking for bobbed up ahead of us just at dusk where I wanted it to be. When I shouted exultantly and pointed it out to Charlie, it looked like a small, black, tall silk hat bobbing up and down in the breakers and churning about round and round in the yellow sand-laden, tide-driven water. Charlie thought I was mad when I told him to steer in close to it, and wouldn't do it. I knew it could be nothing else but the black can-buoy marking the channel to North Edisto Inlet, and I let her drive—over shoals which, if I'd been wrong in my reckoning, would have led to shipwreck instantly. But I wasn't wrong; and in an hour we were safely anchored at Young's Island, and the natives were crowding round us and asking us "where in H—— we had come from, anyway?" and where we had spent the day and the night before in the blow, for we certainly couldn't have lived outside and they hadn't seen us inside.

It was here, at Young's Island, that we fell in with the Madeline, from Boston, Capt. Gethro, owner and master. A few nights later this same Madeline, a powerful passenger boat some 50 feet long, was reported as lost outside, but got in some days later after a terrible experience. That was the night we tried to cross Beaufort Bar, N. C., but gave it up and finally found a harbor of refuge behind Cape Lookout.

Charleston, S. C., beautifully situated at the forks of the Cooper and Ashley Rivers and almost surrounded by its own harbor, with its straight and regular streets well paved and amply shaded, its aristocratic Battery, its Southern houses and cordial hospitality, its beautiful magnolia and azalia gardens 18 miles up the Ashley River, its unique lighthouse in the tower of St. Philip's Church—140 feet high and visible 18 miles at sea—and its historic churchyards and harbor forts, Moultrie and Sumter, is, perhaps, the most delightful place to tarry upon our entire Atlantic coast; at any rate, I was loath to leave it and its generous Yacht Club, where a respectful, well-trained darky stood ever at one's elbow with "Fill it up again, sir?" as the mint-tufted glass showed signs of losing the pristine elegance of its frosted coating. Before the war this must have been a charming place of residence for a gentleman of leisure. To-day, however, in everything that pertains to business and progress it seems hopelessly left behind the high-water mark of Northern progress—a direct contrast to Jacksonville.

Two days later we passed out between the splendid stone jetties which hold Charleston's channel open and make her harbor one of the most accessible and the safest to enter between Norfolk and Key West. A sailing vessel, however, must have a fair wind, or a tug, to pass through the narrow walled lane made by the long jetties that lead out towards the lightship, and through which St. Phillip's Church steeple light acts as a range by both day and night. It is a curious fact that this steeple should have been so placed by accident. It is the only church I have seen on our Atlantic coast that has a government lighthouse in it.

The morning of April 17 found us running N. N. E., 5 miles

MYRTLE IN LOCK AT NORTHERN END OF LAKE DRUMMOND CANAL

MYRTLE ENTERING DISMAL SWAMP CANAL

PASSING THROUGH A LOCK IN THE DELAWARE AND RARITAN CANAL, NEAR PRINCETON, N. J.

A BRIDGE ACROSS THE DELAWARE AND CHESAPEAKE CANAL WHICH CONNECTS DELAWARE AND CHESAPEAKE BAYS

outside the Cape Fear lightship, which we could just distinguish on the horizon. This carried us well outside of Frying Pan Shoals and 35 miles from the nearest land on Cape Fear. The wind was fair and fresh, and we were under both single reefed sail and engine, making about our best time, 6 knots, over a rather high, but long, easy, following sea, that rolled in under our bluff bows along the thin planks of the bilges and then out under her square stern with a swish and gurgling noise that sounded not unpleasantly down in the cabin. We were bound for Beaufort, N. C., and all around the horizon not a speck of land was in sight.

When the waves are breaking white all the way across Beaufort bar, although there is 15 feet of water in the channel, no boat can pass in and live. She would be hurled end over, only to be cast at last on the beach and stove into splinters. These were the exact conditions that we found when we arrived there at 8 o'clock that night, and, after studying the situation for ten minutes, decided, wisely, as the pilot told us later, to keep on to Cape Lookout, 10 miles further, and run the chance of finding the narrow entrance that leads into the bight south of it. Here we arrived at midnight, and felt our way in with the lead line, being guided by the roar of the waves on the shore, keeping the eastern shore closer aboard. We passed, on the way in, a dismal wreck of a three-masted schooner, which had failed in attempting to do what we did only a short while before.

ALBEMARLE AND PAMLICO SOUNDS

Sailing through Albemarle and Pamlico Sounds, which we entered via the new canal after leaving Beaufort, is unique. Our course through them was upwards of 80 miles long, and required two days and a night against a gale of regular "Hatteras" weather all the way. The night was spent anchored miles off shore in 7 feet of water on Brant Shoal, within a stone's throw of the light—on which screw-pile structure we saw no sign of life save the rays from the lantern during our entire stay from 5:30 P. M. to 8 A. M. next day.

The seas were more than choppy; in fact, for their height, which was perhaps from 3 to 3½ feet, they were the shortest and closest together I ever saw. Myrtle behaved as if she had the wash of two big steam ferryboats, one on each side, pounding against her sides and washing over her decks and rolling her scuppers under all night. I was the nearest to being seasick here on this inland body of almost fresh water that I was during the whole trip, and Charlie did not seem to relish his own green pepper hash at breakfast next morning.

This 80 miles of inland Sound sailing is well marked out by screw-pile lighthouses, set down in the channel, usually in from 7 to 12 feet of water, and at such distances that you can run from one to the next and thus avoid the long shoal bars and points that make out from the shores. Some freighters and a good many fishing boats are to be seen, and we met a few shallow, queer-looking, plumb-stemmed, three-masted schooners, lumber laden. Fish weirs abound, and for from ten to twenty-five cents we could have a fine roe shad whenever we wished. Fish and money were exchanged with a toss from boat to boat as we sailed by, not even stopping.

At times we were able to see the tall offshore lighthouse at Bodie Island—like a barber-pole, with its alternating black and white horizontal bars—marking Oregon Inlet above Hatteras, and even hear the surf pounding on the beach outside, perhaps 5 miles away from us.

We came through the Dismal Swamp canal and got lost through running up the wrong creek by mistake, and were piloted out some miles by a darkey mammy we met in a skiff without painter or bale dish and half full of water, with two unmated oars. She had with her, as crew, her father, a decrepit, old, white-wooled "Uncle," and her son, a pickaninny of eight, both of whom she "bossed" unmercifully. All were dressed in their Sunday clothes and sat up stiffly in the leaky skiff. She had about two dozen eggs which she was taking a half-day's trip to market, and she hoped to find there, at the nearest "post-village," last visited a month ago, a letter from her son in Richmond. I bought her eggs, gave her half a dollar for pilotage, and towed the skiff with its occupants sitting in it to the post-village, and I took her photograph at parting—the latter proceeding being much against her will.

The Dismal Swamp is smaller than the Everglades, but is, next to it, the largest swamp in the United States. In area is comprises hundreds of square miles, and is covered with dense and impenetrable forests of cypress and juniper. Sprinkled through the Swamp are quaint huts and houses of a primitive, but kindly and hospitable, people, both black and white, who now occupy the little post-villages which have sprung up along the canal and its lateral branches, which penetrate far into its formerly gloomy and unpathed depths and by means of which lumber is rafted out by a tedious and slow process. The lumbermen, as we observed, live and sleep on the rafts, working them along through the dark, rich red water colored by the juniper roots.

The only thing about it which impressed me as being "dismal" during our whole passage was the belt of dead, stark trees in the wealth of blossoms and blooms that bordered the southern bank of the canal. These trees were evidently killed when the canal was dug a few years ago by the mud being pumped and piled up several feet high against their trunks. In the twilight of evening or early morning they had a most weird and sepulchral aspect—here truly a dismal swamp. On the right bank this strip extended over a considerable area in breadth, and in some places farmers were ploughing and cultivating this land made by dredging, which should be very fertile.

Our sail up the whole length of Chesapeake Bay ought to have a chapter sometime to tell of our escapes from the fish nets and weirs at night, most of which, fortunately, were protected with lanterns hanging on them. They extended half-way across the Bay almost throughout its entire length, and they certainly gave us excitement enough. We were out among them only one night, however, and had a fine run up the Bay. Through all the dark hours our path was as brilliantly lighted as Broadway, because of the numerous illumined passenger steamers which passed us, often too near, in spite of our lighted lantern and side-lights and the horn which we kept repeatedly sounding to warn them of our vicinity.

My fellow members of the Coot Club would have found opportunity enough on this trip to break, not only the game laws, as it has been charged they did by some over-zealous wardens and minions of the law, but to break all the laws of the Decalogue as well; for the famous eastern shore of Chesapeake Bay, or rather of Maryland, to be accurate, abounds in all the good things of life which the "Coots" know so well how to enjoy. Then, too, incidentally, the Bay was so full of ducks and various other water fowl that I think even they would have spared a little time from their usual avocations to do a bit of shooting and justify the name of the club.

One accident, which caused us considerable trouble, was the loss of our centerboard rope or pennant in Chesapeake Bay, and the consequent dropping of the board completely out of the trunk, from which it hung, caught only by the round pin forward. It caused us considerable anxiety by swinging most nonchalantly in this position all the morning, while we were hove to, trying to devise schemes for bringing it back into place without having any tool aboard fit to get a grip on it. The water wasn't any too deep in that part of the bay, either, and we were in constant fear of breaking the board off if it should strike bottom. After various unsuccessful schemes, we finally got the bight of the anchor cable under it, brought the ends up over each side of the boat, and by means of our two tackles, which we led to the end of the boom, we gradually worked it up into its place in the centerboard trunk. The task was a long and tedious one, accompanied by many failures before we finally got the board started right in the opening of the trunk, lashed, and a new rope rove through it.

From the head of Chesapeake Bay our route lay through the canal from Chesapeake City to Delaware City, up the Delaware River to Bordentown, and through the Raritan Canal to New Brunswick and New York; but this route is so well known and has been described so often that this part of our trip need not be told in detail here.

INSIDE AND OUTSIDE ROUTES AND RUNS COMPARED

From Key West to New York, or vice versa, a boat drawing not over 5 feet can go all the way by the inside route, with the exception of about 200 sea miles only—from Charleston, S. C., to Beaufort, N. C. In a very shoal draft craft of, say, 2½ to 3 feet, possibly about 60 miles might be cut off this by using Bogue Sound, south of Beaufort, and the inside passage to Wilmington, N. C.; but this trip would, I judge, from what I could learn of it, be an exceedingly tedious one, from the shoalness of the water and consequent opportunities for getting aground, and would be accompanied also by considerable additional risk if the shallow bars it presents were attempted under any but the most favorable

(Continued on page 144.)

HISTORIC CHARLESTON FROM THE WATER

The Month in Yachting

QUITE a tempest in a teapot has been stirred up on the Pacific Coast over the recent action of a number of power boat and yacht clubs on San Francisco Bay in joining the American Power Boat Association and forming a local section, this action being protested by the clubs of the Pacific Northwest forming the Pacific International Power Boat Association, a local organization on the Pacific Coast. The latter organization calls attention to the fact that these San Francisco clubs would reap more benefit from being members of the P. I. P. B. A. than in being members of an association with headquarters in the East. Without detracting in any way from the benefits to be derived from the local organization, we cannot quite agree with this view, inasmuch as the American Power Boat Association, as is pointed out by the San Francisco Bay yachtsmen, is by far the largest organization of its kind in the country, and most of the races that are now held are run under their rules. The fact that these clubs are 3,000 miles away does not alter the case materially, and there is no reason why the same clubs should not also be members of the P. I. P. B. A. if they desire.

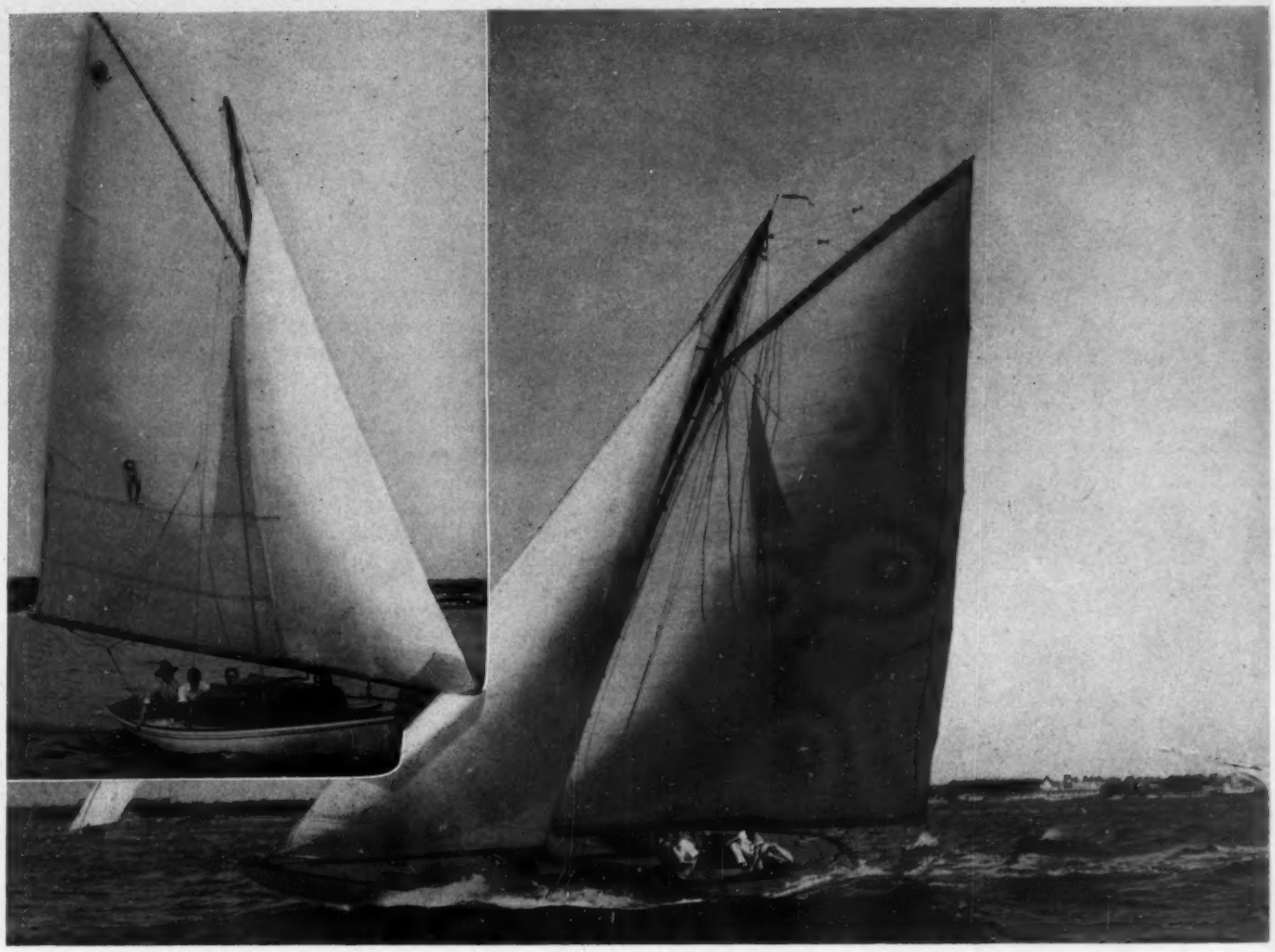
The present policy of the A. P. B. A. of creating local sections to look after the individual needs of their localities does away with the charge that any one section is not deriving its proper share of benefit from the parent association. The Pacific International Power Boat Association has done excellent work among the clubs on Puget Sound, and will continue to do so; but it would seem as if better results could be obtained if it worked in harmony with the other large power boat associations, to the end that all such associations might send delegates to a national commission which would really govern and control the sport and settle intelligently any questions or disputes that might arise. We hope that the

MOTOR BOAT RACING ON SAN FRANCISCO BAY

PEORIA, A "RED-HOT" RACING TOWN, WILL AGAIN SEE THE W. P. B. A. REGATTA

two sections on the Pacific Coast will adjust their differences and continue to work for the welfare of the pastime in their localities, instead of harboring any feeling of jealousy over the affiliations of certain clubs.

In line with other movements that have taken place this year towards making yacht racing and power boat associations of more use to their members by giving them powers other than advisory for bringing about uniformity in rules and settling any points at issue, the Yacht Racing Association of Gravesend Bay has recently amended its constitution so as to make the Association a final court of appeal in disputed matters relative to yacht racing in Gravesend Bay and adjacent waters. These amendments will be submitted to the various clubs forming the Association, and, if adopted, will become a law. The changes provide for the appointment of an official measurer of the Association; they define his duties and fix his compensation, and also provide for an appeal from a decision of a regatta committee to the executive committee. In this connection, however, the Association has provided against the abuse of this clause by making it necessary to put up a deposit with such an appeal, which will be forfeited if the appeal is not sustained.



GRAY JACKET, CHAMPION OF THE Q CLASS ON GRAVESEND BAY FOR 1912. INSERT: ONE OF THE OLD S BOATS. THIS CLASS WILL PROBABLY SEE SOME NEW BOATS THIS YEAR

The prospects for racing on the Bay next season are bright, and it looks as if there would be a boom in racing inside of Norton's Point next summer. The chances are that the Q class will be largely increased, as three new boats have been ordered from designs by William Gardner. Among those who will own these new boats are J. Stuart Blackton, Albert E. Smith and Peter W. Rouss. It is probable also that two more boats will be built to this class, while there has been some talk of some new class S yachts—a class that has been popular on the lower bay in the last few years. This latter class is an excellent one for a man of moderate means, as the boats are large enough to be of some use, and can be turned out for about $1,000. The Star class also bids fair to boom on the Bay next summer, and several yachtsmen are negotiating for the purchase of some of these small boats.

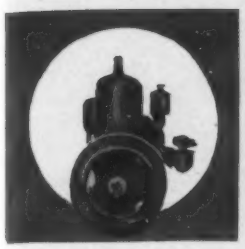
Following are the winners of the Association championships:

Class Q—Grayjacket, owned by F. C. Noble, Atlantic Yacht Club, 80 per cent.; handicap, first division, Joy, owned by Le Savage & Geer, Bensonhurst Yacht Club, 82 per cent.; handicap, second division, Blue Bill, owned by Jeb Meyhew, Atlantic Yacht Club, 85 per cent. Class S—M and F II, owned by C. M. Camp and J. E. Marchant, Marine and Field Club, 79 per cent.

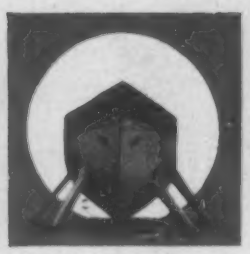
After an absence of two years Peoria will again see the championship races of the Western Power Boat Association. The big regatta will be held on Peoria Lake, August 9 and 10, under the auspices of the Ivy Club and Peoria Yacht Club. Some of the best races ever held by the Western Power Boat Association have been those pulled off by the Ivy Club, and Peoria not only boasts of many enthusiastic "power boaters," but is a "red-hot" racing town.

Racing men will be interested in hearing that the W. P. B. A., which has heretofore stood for unrestricted classes, has adopted a restriction on its three small classes—the 20, 26 and 32-foot—the restrictions being a limited piston displacement. The 20-foot class is limited to 200 cubic inches piston displacement, 26-footers to 350 cubic inches, the 32-footers to 650 cubic inches. The 40-foot class is still unrestricted, and in the championship events in this class there will be no restrictions for boats of any size. This step of the W. P. B. A. in restricting the smaller classes should benefit racing, as it does not place a premium on the man that can afford to put unlimited power in his boat. In other words, it will give the man of moderate means a chance in the three smaller classes.

Probably no body of water of its size has produced a more enthusiastic group of power boat men in the last few years than the Delaware River from Trenton to below Philadelphia. Power boat clubs have grown and multiplied rapidly, and racing (both speed-boat and long-distance) has been strongly supported. Next year seems to promise even a livelier season than the past year, if plans count for anything. There are eighteen clubs in the Delaware River Yacht Racing Association, and it is proposed that sufficient races be scheduled next year to give each of these clubs at least one regatta, while it is planned to hold a big motor boat carnival at the end of the season in which all clubs will participate. There is surely no lethargy among the Delaware River sailors.



USEFUL HINTS & WRINKLES

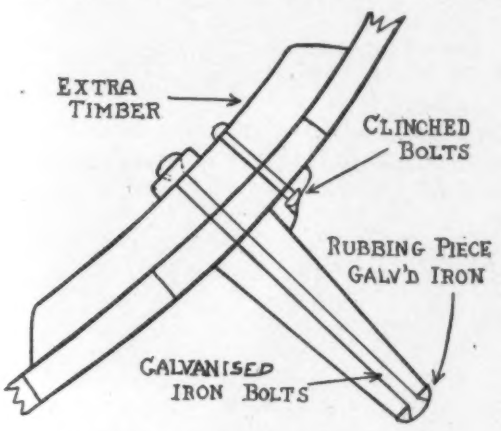


Under this head we will publish short articles from the readers of YACHTING, describing original ideas they have worked out for improving the efficiency and handiness of their boats and engines. These will be paid for at space rates. Articles must not be over 500 words in length, should be accompanied by ink drawings where possible, and must be addressed to Editor of YACHTING, 141 W. Thirty-sixth Street, New York. Here is a chance to be a philanthropist by giving to other boat owners information on some of the handy wrinkles you have applied to your own craft.

Fitting a Bilge Keel

There is a growing tendency to fit bilge keels on motor boats which are to be used in rough water, as they tend to lessen the rolling and also strengthen the boat by giving a longitudinal stringer on the outside.

As most of these keels are added after a boat has been in use some time, the following will give a brief outline of how the work is done: The bilge keel itself should be made of oak. The depth will vary according to the ideas of the owner, but for a boat of about 35 feet on the waterline these dimensions will be about right: Length, 18 feet; depth, 5½ to 6½ inches; width at hull, 2½ inches; width at lower edge, 1¼ inches



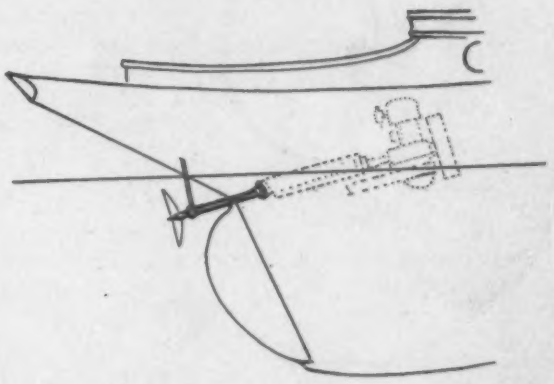
METHOD OF FASTENING BILGE KEEL ON MOTOR BOAT

This should be bolted on the hull just below the turn of the bilge, and should begin at a point some 8 or 9 feet aft of the stem and extend to within 7 or 8 feet of the stern, although different shaped hulls may vary these figures somewhat. They should be held to the hull by galvanized iron through bolts. These bolts should not be put through the frames, owing to the fact that the frames are already pretty well bored for the plank fastenings. They should go through an extra frame or timber about the size of the frames of the boat and spaced about midway between each of the regular frames. These extra timbers should be from 20 inches to 2 feet in length, and will be held in place, as shown in the drawing, by the through bolt and by a copper bolt clinched over a washer in either a small sawn oak knee on the outside or through an angle iron, which will take the place of the knee. The angle iron is to be preferred, as it offers less resistance to the water, and can be fastened both to the hull and to the bilge keel. The drawing of cross-section shows method of fastening. The bilge keel should be tapered from the center towards either end, so that it is only about half the depth of the center at the ends, where it is rounded off to meet the hull.

The keel should be shod with a half-round galvanized iron shoe. The bilge keel should be made strong enough, so that it will not be torn loose if the boat ever takes the ground or strikes any floating object. W. B. D.

Auxiliary Installation Without Cutting the Hull

It is frequently found necessary in installing power in sailboats to put the engine in the center of the cabin or in some other equally undesirable place, in order to get the propeller in an aperture cut in the deadwood or rudder. A very simple way of obviating this in boats of a modern type is shown in the accompanying sketch, and was used successfully in my boat last summer.



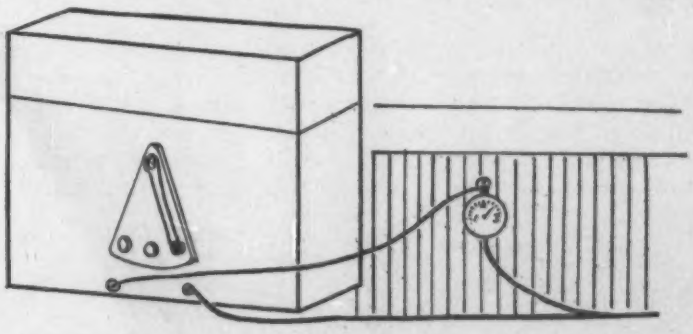
INSTALLING AUXILIARY POWER WITHOUT CUTTING HULL

In most modern boats, especially keel boats, the rudder is low, the rudder post entering the hull some 18 inches or 2 feet forward of the after end of the waterline. This leaves a sufficiently large opening between the top of the rudder and the overhang for the propeller to work in. The engine can be placed on the center line of the boat, though at a very slight angle, the shaft coming out of the garboard close to the rudder post, so that the wheel is only slightly off center. The shaft log may be all inside, with a watertight joint where it meets the garboard and with the stuffing box on the *inside* end of the log. The shaft, which need not be in a sleeve where it protrudes, and propeller may be held in place by a bronze strut (if bronze shafting is used) placed on the under side of the overhang, as shown.

In boats with a shallow run this allows the engine to be placed higher and further aft than usual, and though the wheel is not far below the surface it is sufficient for all purposes, as an auxiliary is usually used when there is not sufficient wind or sea to throw the propeller out. C. K.

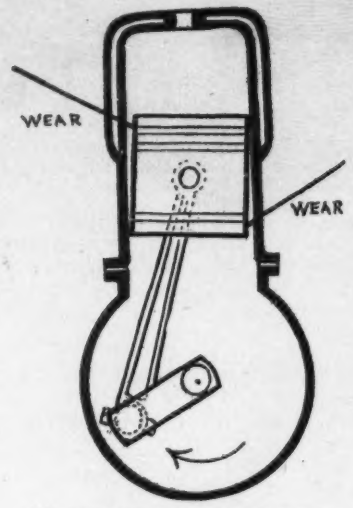
A Handy Way of Testing the Amount of Current Used by Coil

It is often desirable to test, from time to time, the amount of current which the coil is drawing from the batteries, as it is impossible to tell merely by the buzzing sound just how much current this coil is consuming. A very handy way to do this is shown



WIRING UP LOW-READING POCKET AMMETER FOR TESTING CURRENT CONSUMED BY COIL

in the sketch herewith. Take a three-point switch and with one point make a direct connection with the battery. With the other connection pass the current through a low-reading, coil-testing ammeter before it reaches the coil. The ammeter can be hung up on the bulkhead on the side of the boat or the cockpit ceiling,



HOW WEAR CAUSES KNOCK IN CYLINDER

and by merely throwing over the switch you can tell at a glance the amount of current the coil is consuming. H. L. S.

Locating a Knock in the Cylinder

While most engine knocks come from worn or loose bearings, occasionally a knock occurs in the cylinder which is very hard to locate. I had one in my own engine some time ago, and, after overhauling it a number of times, finally located it in a worn piston. The enclosed cut shows how this happened. The drawing is somewhat exaggerated for purposes of illustration. It will be seen that there is considerable side thrust of the piston against the cylinder wall on every up-stroke of the piston from lower dead center to 270 degrees, or to three-quarters of the cycle, caused by the centrifugal force of the connecting-rod. This resistance always comes on the side of the cylinder wall and is responsible for the wearing of the wall into an oval shape that spoils the fit of the piston in the cylinder. As this wear increases the knock becomes very noticeable, especially when running under a load. This trouble can be detected by careful inspection of the cylinder and piston after disconnecting the connecting rod. The only remedy I found in my case was to have the cylinder reground and to fit in new piston and piston rings. W. T. S.

Mixing Lubricating Oil with Gasolene

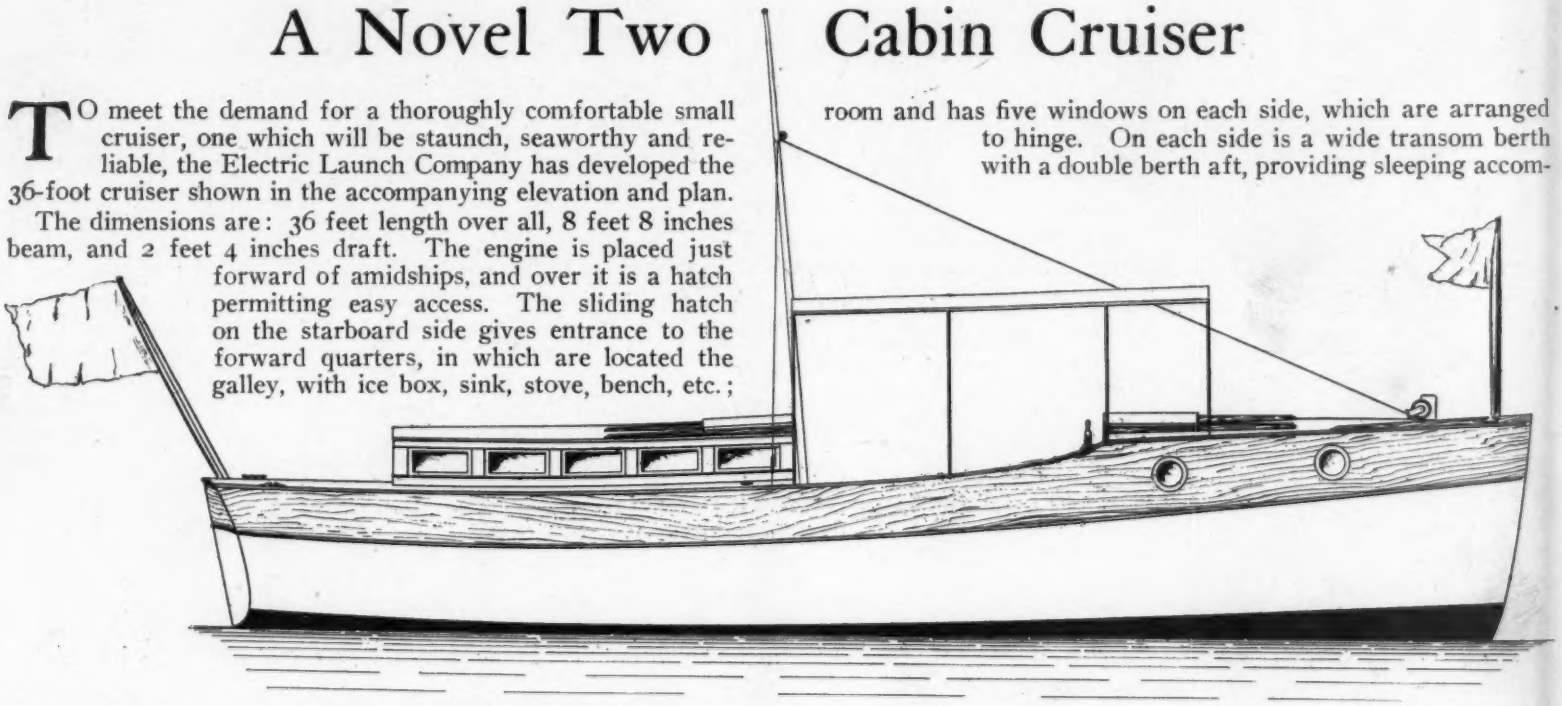
In lubricating engines through the fuel supply, which is now quite common in two-cycle motors, the instructions say to mix the oil and gasolene thoroughly before pouring into the tank. This is frequently inconvenient to do, owing to the fact that you have no vessel handy large enough in which to mix thoroughly, the five-gallon cans of gasolene being filled too full for this purpose.

An easy way to do this is to let one man pour the pint of cylinder oil (using a fairly heavy-bodied oil) into the filling funnel at the same time the five-gallon can of gasolene is being emptied into it. In this way, if he times the rate of flow to suit that of the gasolene, the two will be thoroughly mixed by the time they get into the tank.

A Novel Two Cabin Cruiser

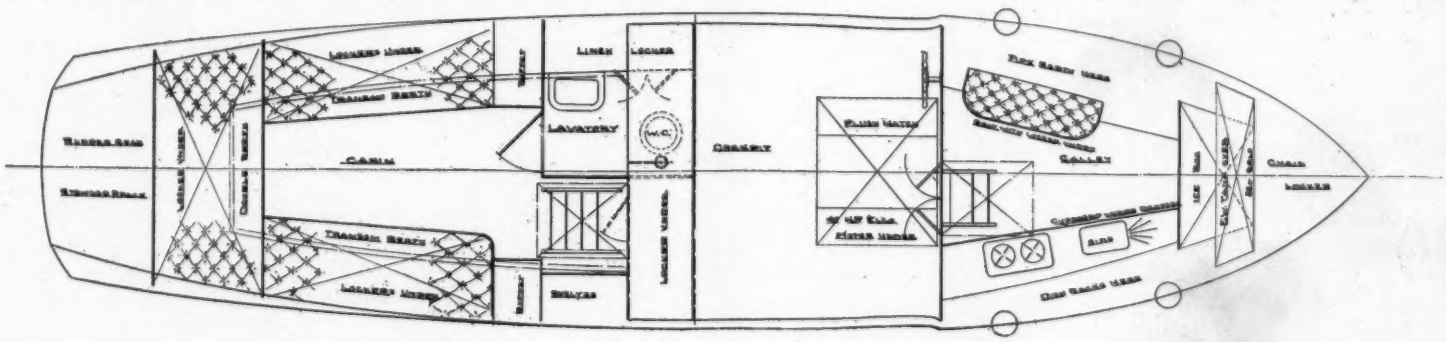
TO meet the demand for a thoroughly comfortable small cruiser, one which will be staunch, seaworthy and reliable, the Electric Launch Company has developed the 36-foot cruiser shown in the accompanying elevation and plan.

The dimensions are: 36 feet length over all, 8 feet 8 inches beam, and 2 feet 4 inches draft. The engine is placed just forward of amidships, and over it is a hatch permitting easy access. The sliding hatch on the starboard side gives entrance to the forward quarters, in which are located the galley, with ice box, sink, stove, bench, etc.; also a berth, which can be utilized by the engineer. Ample light and ventilation are provided by the large ports and hatch.

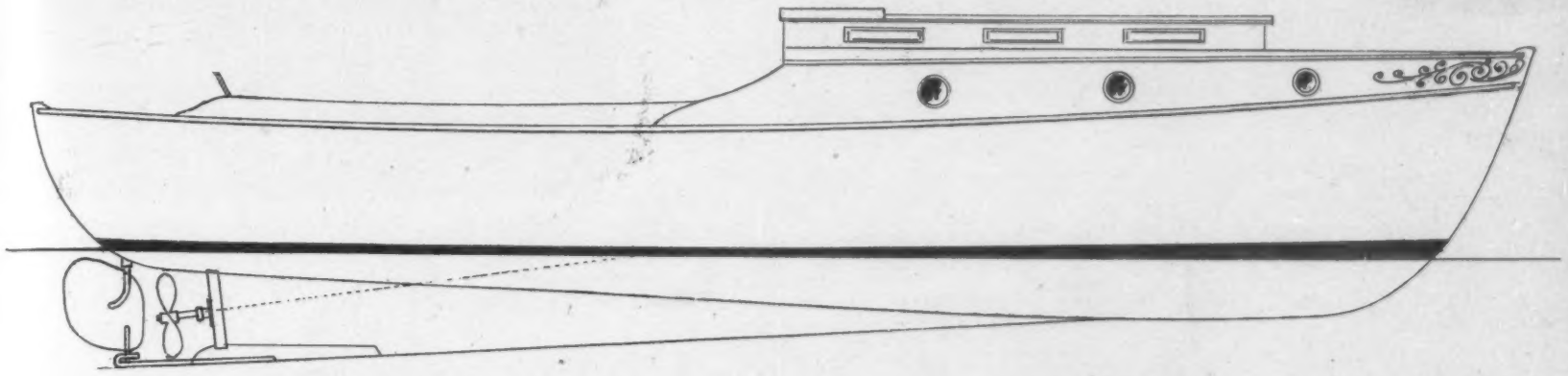


The raised cockpit or bridge is amidships, 8 feet 6 inches long and the full width of the boat, with a lazy-seat extending across its after end. A companionway on the starboard side leads aft to the owner's quarters. The cabin trunk gives full 6 feet headroom and has five windows on each side, which are arranged to hinge. On each side is a wide transom berth with a double berth aft, providing sleeping accommodations for four persons. Underneath the berths are drawers and lockers; buffet lockers are on each side of the cabin and a full-length locker is under the companionway.

The boat is driven by a four-cylinder, 30-40 horsepower Elco gasolene engine, which gives her a speed of 12 miles per hour. It is equipped with the Bosch dual ignition system, em-



ploying a battery and magneto, controls for the spark and throttle being located alongside of steering wheel. Within easy reach is the lever operating the reverse gear, which permits of "one-man control." This boat will be on exhibition at the New York show.



Whaleboat Model 31-Foot Cruiser

THE most difficult problem with which the small boat designer is confronted in turning out a cruiser is the question of how to get headroom without impairing either the appearance or seagoing qualities of the craft. The raised deck type of construction was an answer to this, which has its chief value in the fact that it does not cause a break in the sheer line of the boat. The difficulty here is that, as the deck is carried back with very little, if any, rise from the stem, a small boat must be given tremendous freeboard forward in order to have anything like reasonable headroom in the cabin. This excessive freeboard is not only unsightly, but increases windage and makes a boat cranky at sea and an abomination at anchor.

In the plans shown on this page the designer, Mr. J. G. Bonney, of New York, has sought to obviate this difficulty by combining with a raised deck of moderate height a low trunk skylight over the standing room in the cabin. This compromise gives 5 feet 8 inches headroom in the cabin of a cruising launch only 31 feet over all, and does it, moreover, without either breaking the sheer line appreciably or necessitating excessive freeboard forward.

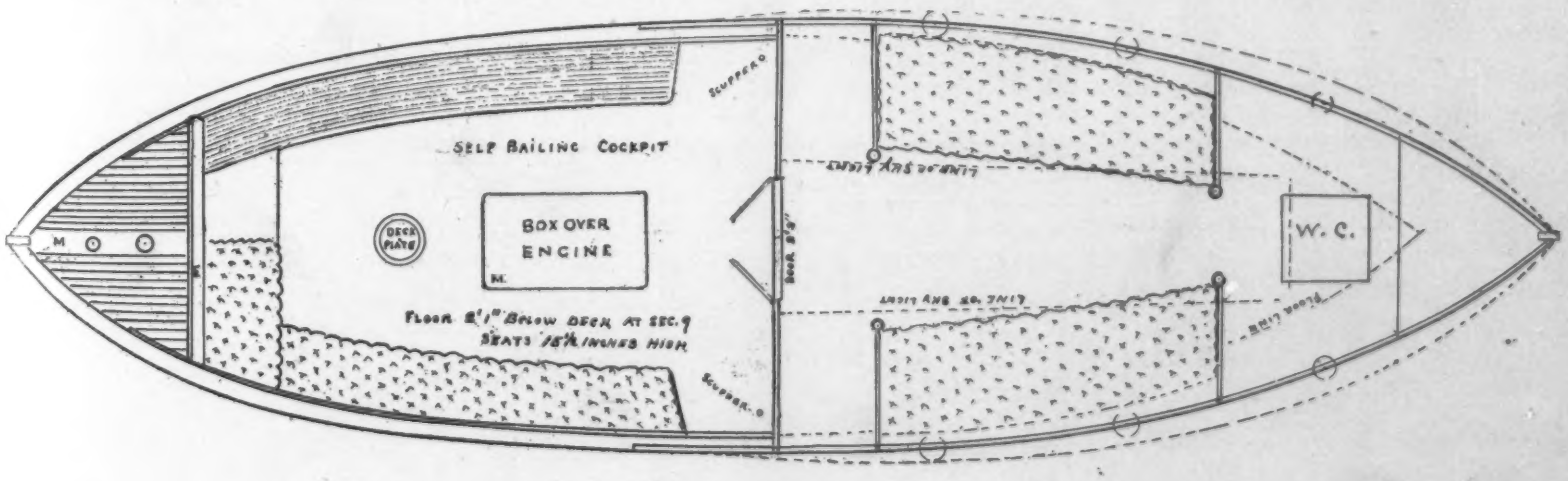
WHALEBOAT CRUISER, SHOWING SKYLIGHT, WHICH ALLOWS HEADROOM

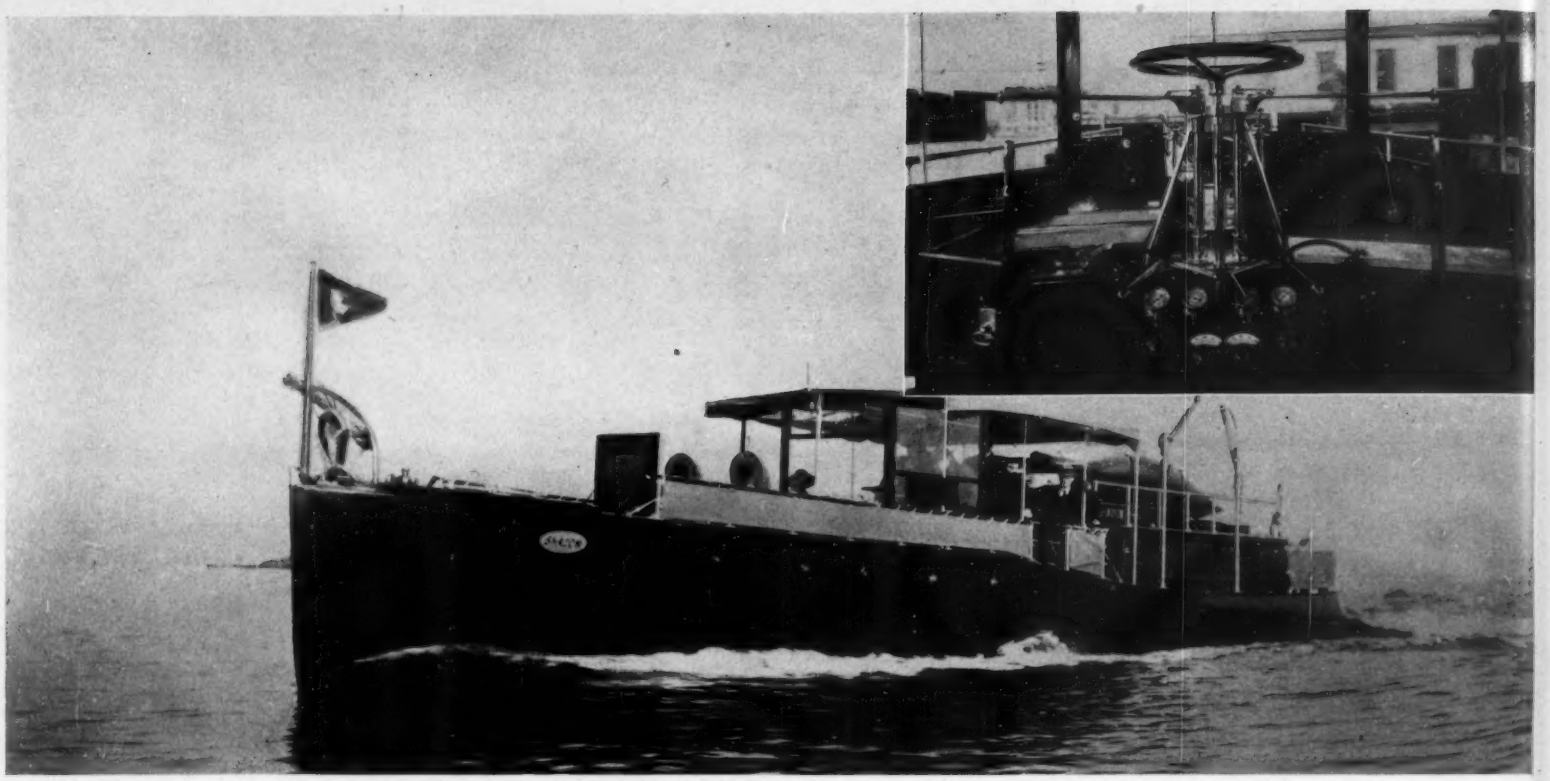
The principal dimensions are: 31 feet over all, 28 feet waterline, 8 feet 8 inches beam, 28 inches draft. The boat is engined with a 4-cylinder, 12-horsepower Doman, and has a speed of 9 to 10 miles.

The cabin has two 6-foot transoms, with room at the after end for lockers and shelf for an oil stove. The cabin is unusually well lighted, and has a large port at the forward end of the skylight trunk, from which it could easily be arranged to con the boat in bad weather, simply by carrying the tiller ropes forward through the cabin bulkhead and installing a steering lever of the sort common on yacht club launches. All the after part of the boat is cockpit, the floor of which is raised so as to render it self-bailing by means of scuppers.

A box hatch covers the engine, which is easily accessible, and, at the same time, is kept from polluting the air of the cabin. The craft is designed on whaleboat lines, of which Mr. Bonney is a strong advocate. Construction is substantial, yet not excessively heavy—oak frames and keel, with cedar planking, copper fastened. The boat was built by Julius Peterson, of Nyack, N. Y.

The photograph shows, more clearly than the drawings, the boat's able and seagoing model. She is tapered at both ends, and yet has buoyancy enough aft to insure her stern lifting well over a following sea. She will behave equally well before the wind or bucking into a head sea.





The 65-Foot High Speed Cruiser "Shadow"

A GOOD example of the latest tendency in motor boat design—that of carrying the lines of the small, semi-speed boat into the design of the large, fast cruiser—is shown herewith. Compare the plans of the new 65-footer Shadow with those of the Speedway runabout on the next page. Except for a slight difference in the stern and disposition of the rudder the two body forms correspond so closely that the one might almost be converted to the other simply by a change in the scale. Yet the ratio of the sizes is, roughly, 2 to 1.

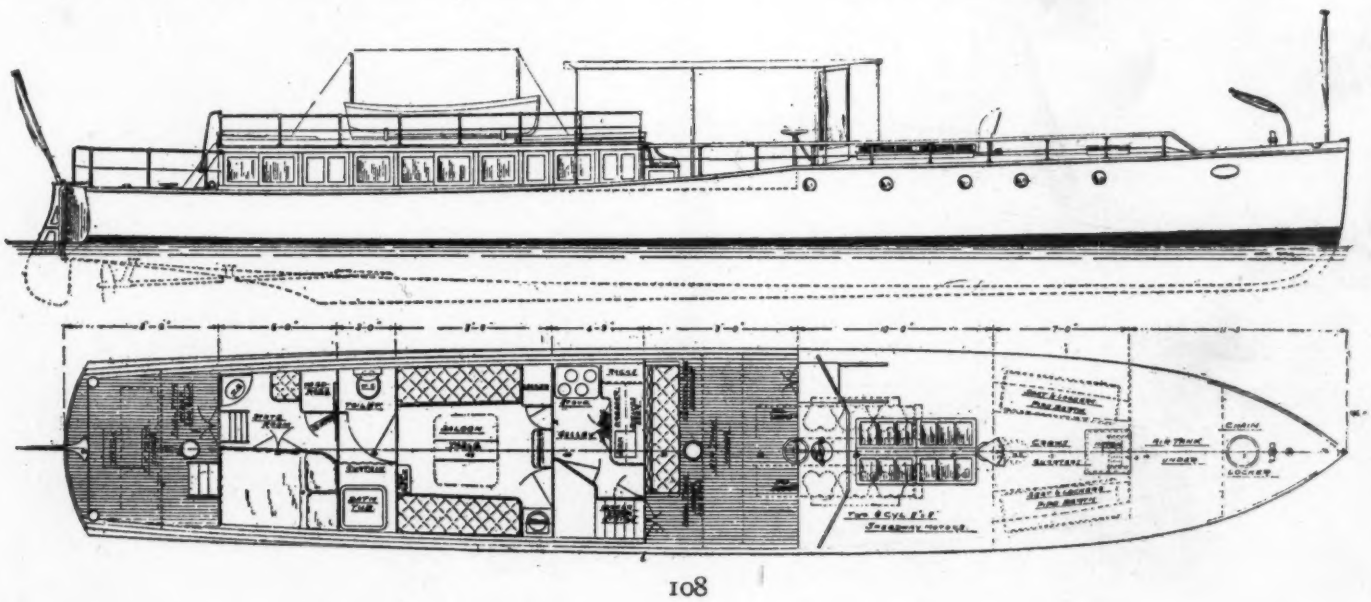
For cruising at good speed on sheltered waters Shadow is an extremely attractive boat, as she is handsome, fast and well arranged for the comfort of a small party. While the old salt may take exception to the large glass wind-shield at the forward end of the control platform and to the profusion of windows in the cabin, these features greatly enhance comfort and are not in any way detrimental in the service for which this type of boat is intended. Shadow was designed and built by the Gas Engine & Power Company and Chas. L. Seabury & Co., Cons., of New York, for Mr. Carl Fisher, of Indianapolis, Ind., for cruising in Florida waters.

Her principal dimensions are: Length over all, 66 feet; length waterline, 65 feet 6 inches; beam, 10 feet 6 inches; draft, 3 feet.

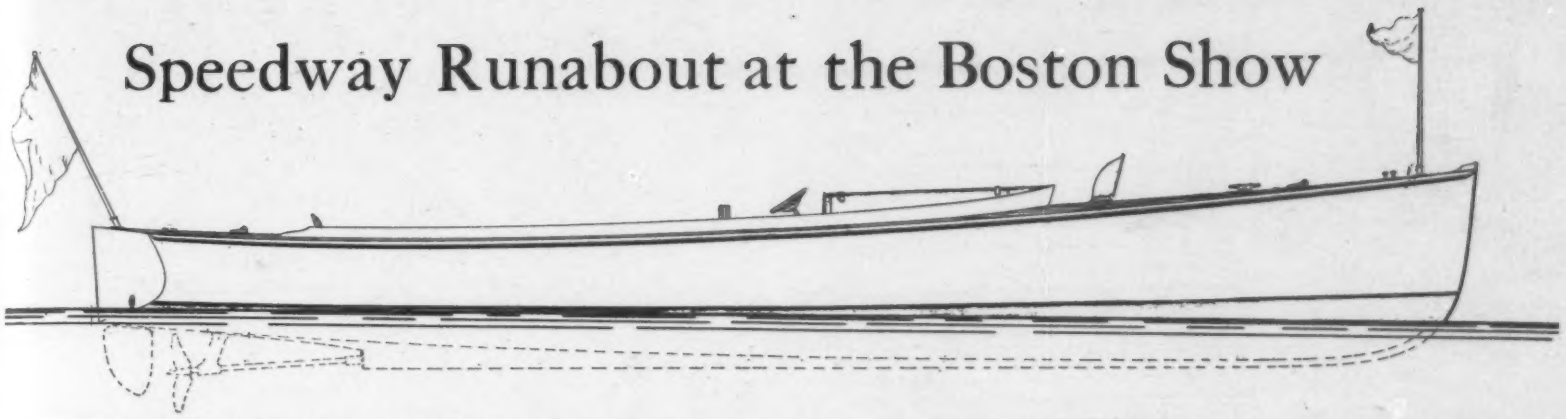
The crew space and engine room take up the forward half of the boat under the raised deck. Then comes the control deck, with fuel tanks under. One-man control of the two 6-cylinder, 8-inch bore and stroke Speedway motors which drive her twin screws is an interesting engineering feature. A steering wheel mounted on a vertical axis is employed.

At the after end of the control platform is a lazy-back bench at the starboard side of which is a companionway leading down into a passage which opens into the galley, to port, and into the main saloon right aft. This is fitted with transoms, which may be made up as berths to sleep two comfortably. Aft of the saloon comes a bathroom, and aft of this, again, is a large owner's stateroom with steps leading up to the after deck.

Deck space is also provided by the top of the cabin house. Shadow is capable of making 27 miles an hour.



Speedway Runabout at the Boston Show



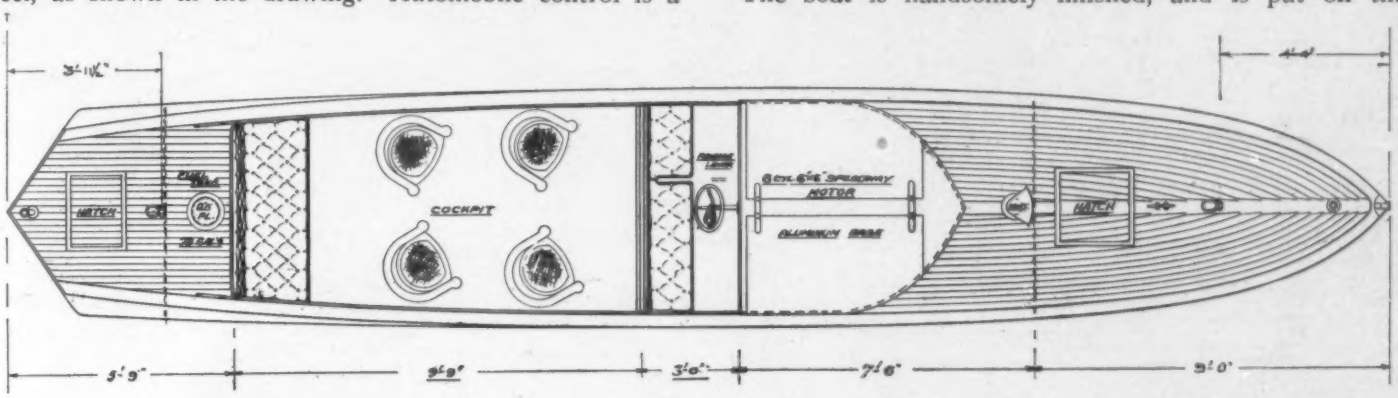
A TRIM little semi-speed runabout is the new Speedway 35-footer designed and built by the Gas Engine & Power Co. and Chas. L. Seabury & Co., Cons., of Morris Heights, New York, and which will be on exhibition at the Boston Motor Boat Show.

The engine is a 6-cylinder Speedway, of 6 inches bore and stroke. It is located under a hood directly in front of the steering wheel, as shown in the drawing. Automobile control is a feature of this, as of former Speedway models. Spark and throttle controls are on the steering wheel and the reversing lever is at the helmsman's hand, the seat having a slot for it.

The principal dimensions are: Length over all, 35 feet; length waterline, 34 feet 4 inches; beam, 6 feet; draft at propellers, 2 feet 6 inches.

The forward athwartships seat is wide enough for two persons in addition to the helmsman, and the after cockpit is fitted with chairs, and has also a lazy-back settee at its after end.

The boat is handsomely finished, and is put on the market fully equipped with all requisite fittings. She is capable of a speed of twenty-five miles per hour in smooth water.

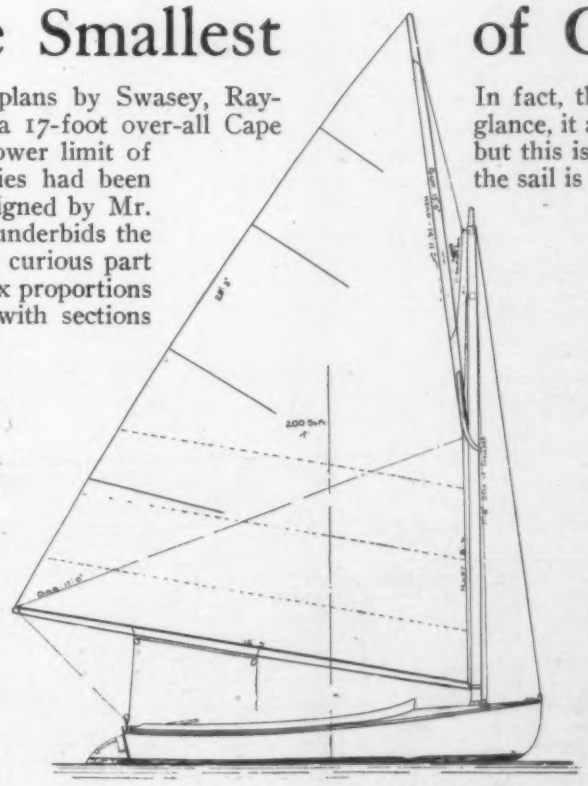


The Smallest of Cats

WHEN we published last month plans by Swasey, Raymond & Page, of Boston, for a 17-foot over-all Cape Cod cat we thought that the lower limit of size for anything but dinghies and dories had been just about reached; but here is one, designed by Mr. J. G. Bonney, of New York City, which underbids the former title holder by two feet—and the curious part is that she is a real boat, with the orthodox proportions of her type only slightly modified, and with sections which give promise of fair speed combined with great stability and buoyancy. It is in the last two respects that she outclasses her nearest competitors—the racing dinghy and sailing dory.

This little craft should make an ideal sort of small boy's "single-hander" for learning the fundamentals of the game without the danger and humiliation of getting dumped out and having to perch on the weather bilge until rescued by grinning fiends in a particularly detestable "harbor skunk."

The sail area of two hundred square feet is an ample but not excessive allowance, with a high, narrow peak to catch the vagrant puffs of a summer's breeze.

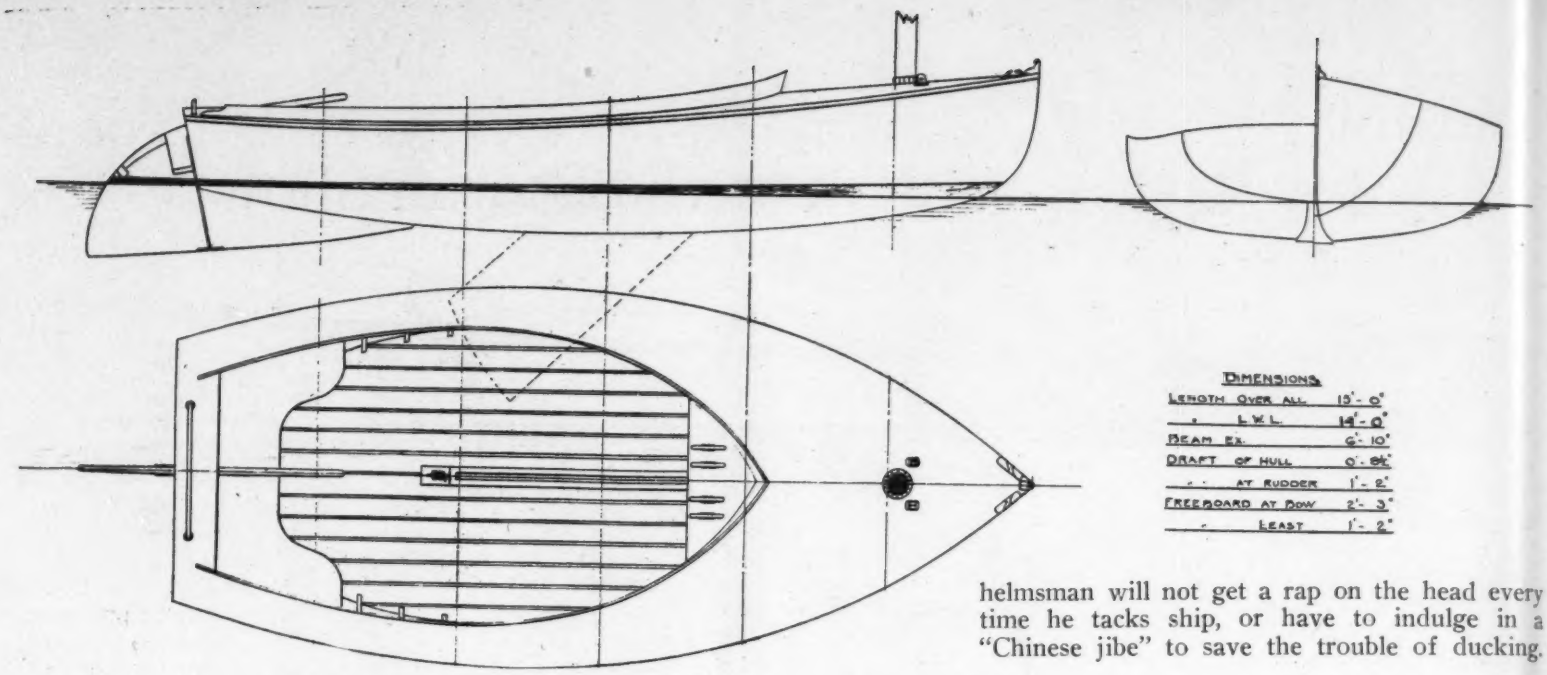


In fact, the sail is peaked up so high that, at first glance, it appears to be of the sliding gunter variety, but this is not the case; there are two halyards, and the sail is a sure enough boom-and-gaffer.

The tiller comes in through a port in the stern, so as to be out of the way of the main sheet traveler block.

A novel feature of construction necessitated by the shallowness of the boat is the rectangular shape of the centerboard, which, when down, more closely resembles a digger plate, but which is raised and lowered by a pennant at the after end and pivoted on a pin at the fore lower corner in the orthodox fashion. Dimensions of the boat will be found on the drawings.

Since the days of the old "sand-baggers" the cat rig has been undergoing a gradual but *sure* approach to the leg-o'-mutton shape of a high, narrow sail. Here the limit has been reached—for a gaff sail—with the peak bridle traveler two-blocks with masthead sheave. The sail is cut with an unusually high raked boom, but that is probably so that the



Dimensions	
Length Over All	75'-0"
" L.W.L.	14'-0"
Beam Ex.	6'-10"
Draft of Hull	0'-6½"
" at Rudder	1'-2"
Freeboard at Bow	2'-3"
" Least	1'-2"

A 75-Foot Power Cruiser

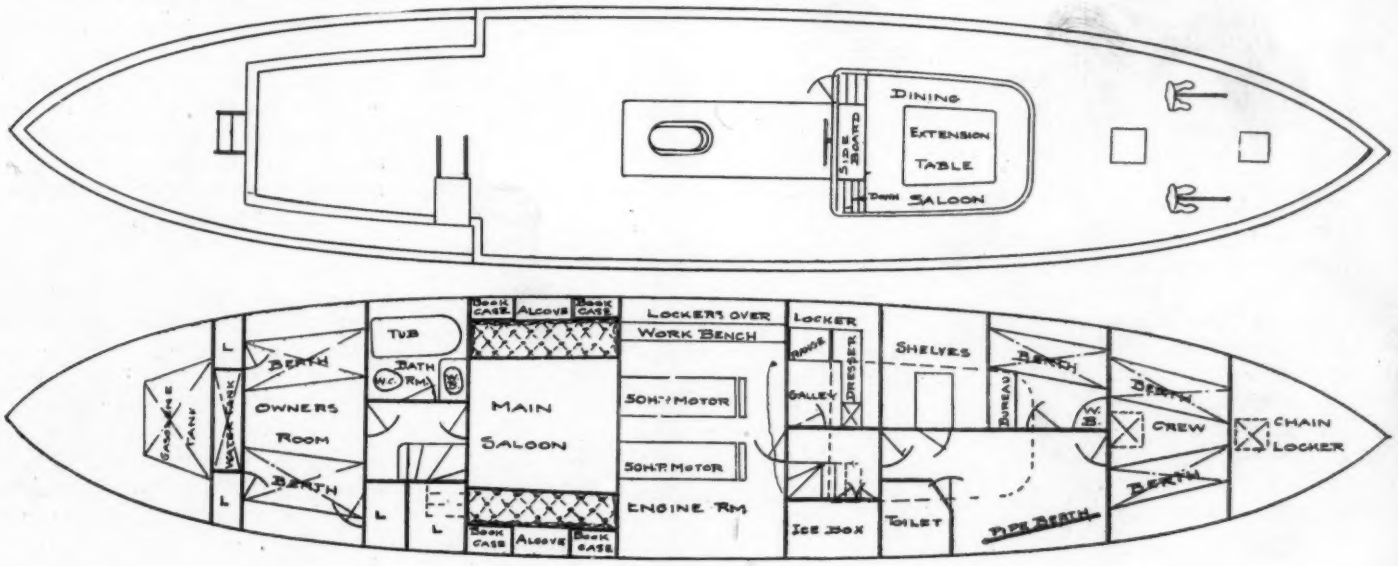
THIS boat has been designed by Tams, Lemoine & Crane, of New York, for a Philadelphia yachtsman, and will be used in cruising on the Maine coast in the summer and in Southern waters during the winter months. The principal dimensions are: 75 feet length over all, 14 feet beam and 3 feet 6 inches draft. She has oak timbers and frames, and is double planked with cedar and yellow pine, copper fastened.

Power is supplied by two 50 horsepower Twentieth Century motors driving twin screws. The engine room, which is amidships, is well ventilated by the false stack and cowls, and has over 7 feet headroom. The headroom throughout all compartments is remarkable, the least being 6 feet 5 inches. Fuel enough for 1,000 miles cruising at 11.6 knots speed is carried in copper tanks, the piping from which runs outside the hull to the engine room, thus eliminating all danger of leakage of gasolene into the bilge.

As this boat will be used for continued cruising, special attention has been paid to providing habitable quarters for sailing master and crew. There is a large forecastle, with a roomy captain's cabin just abaft it on the port side, while on the starboard side opposite there is a mess room, where an extra hand may bunk at night on a swinging berth.

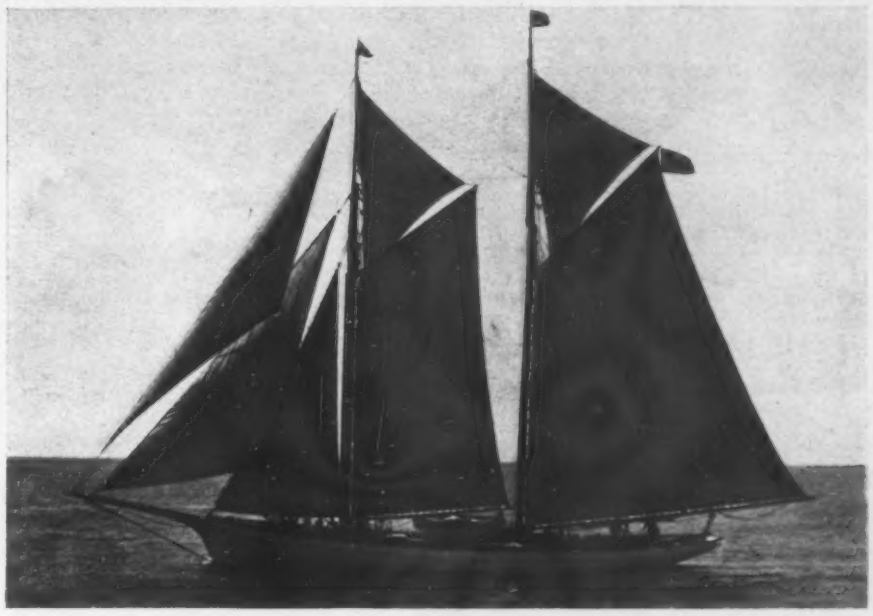
The galley is of a good size and well ventilated. The owner's quarters begin abaft the engine room bulkhead, and consist of a large saloon with transom berths, which may be extended to sleep four persons. Abaft the saloon is the owner's stateroom, extending the full width of the boat, and having access to the after deck.

The boat has ample deck space, and there is a dining saloon on deck forward lighted by windows on three sides. She is an extremely attractive design, and bears out well the designer's claim that she is both "smart-looking and sensible."



Lurline—An Old Timer Which Refuses to Become a Back Number

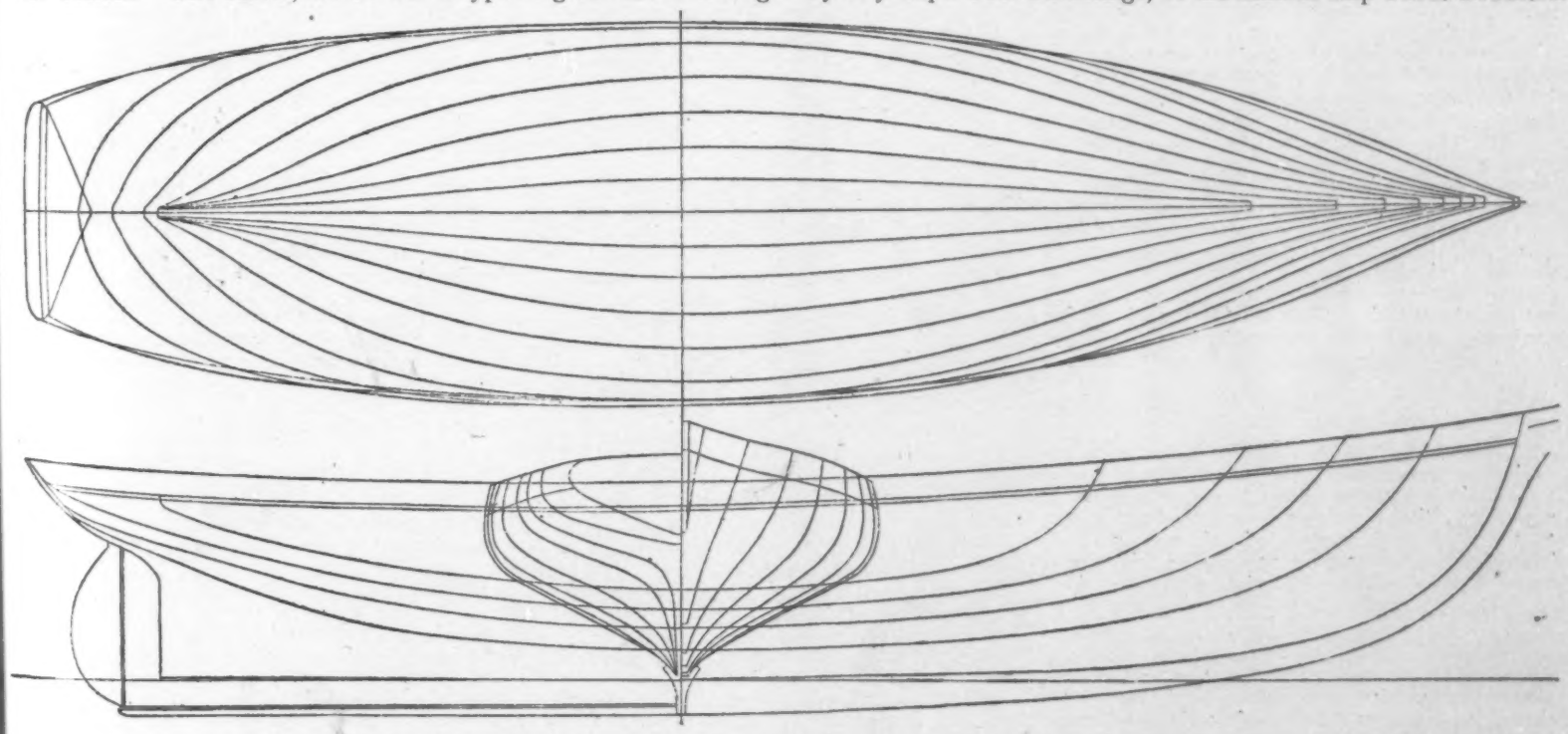
IT is not often nowadays that an important yacht race is won by a real old-timer, yet that is just what happened this year when Lurline, of the vintage of 1883, romped away from two new Crowninshield boats, Hawaii and Seafarer, in the 2,220-mile tussle from San Diego to Honolulu, beating them by a matter of hours, boat for boat. Lurline, it is true, was favored in having in Lou Harris a skipper who knows the Pacific as a Gloucesterman knows the Banks. The discussion of the tracks of the different vessels in the race which was published in the October YACHTING showed clearly that Captain Harris's judgment as to course worked out best under the conditions of wind and weather which were encountered. At the same time, the most any master can do is to get the best out of his boat; so in the last analysis a goodly share of the credit for the victory in a well-contested race must go to the vessel itself and the man who created her.



LURLINE, WITH HER PRESENT POLE BOWSPRIT RIG

Lurline was modeled and built as a centerboard schooner yacht in 1883 by Capt. Matthew Turner, at Benicia, Cal. She possesses several features which look strange to us nowadays, but which her long, successful career has certainly justified. Note the V-shaped sections under water, the sharp, high bilges, and the decided tumble-home. There is no question about this vessel's possessing bearings, or of the fact that she is intended to sail on her bottom. The cutter, which was a type in great favor among yachtsmen during a period contemporary with Lurline, had a penchant, like the modern racing sloop, for careening along on her ear in anything over a reefing breeze; but in modeling Lurline Capt. Turner evidently believed that he could combine stability with speed—and results have justified his belief. The graceful, easy reverse curve at the bow, the easy run, and the way in which the extreme beam has been carried well aft are features worthy of study by present-day designers.

In recent years Lurline's overhang aft has been extended 7½ feet. The principal dimensions originally were: Length over all, 80.5 feet; waterline, 72.4 feet; beam (waterline), 20 feet; depth of hold, 8 feet; draft, aft, 8.25 feet; registered tonnage, 47.35; displacement, 74.83 tons; lead on keel, 8.5 tons; inside ballast (lead), 17.25 tons; total sail area, 5,959 square feet, of which only 1,854 feet are in the mainsail; height of mainmast, deck to cap, 68 feet; main topmast, 21 feet; bowsprit and jibboom, 44.5 feet outboard; main boom, 52 feet; main gaff, 22 feet; fore boom, 26.5 feet. These spar measurements indicate a moderate rig, with sail well divided and having the long "nose pole" of the '80's. Her keel is out of a stick of Oregon pine 2 feet square; keelson, 12 x 10 inches. Frames of cedar, spaced 2 feet on centers. Planking, 2½ inches; deck 3 inches; ceiling, 2 inches. She was rigged in clipper ship style by Capt. Geo. Cummings, of the famous ship Three Brothers.



LURLINE AS ORIGINALLY MODELED IN 1883. THE OVERHANG AFT HAS SINCE BEEN EXTENDED 7½ FEET. OTHERWISE LINES ARE UNALTERED

Mess Room Talk

IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Power Boat Races for Mixed Classes

INDIANAPOLIS, IND.

Our club held a regatta last summer and had races for both sail and motor boats. Our sailboat races were a success, but the motor boat races were not. This was due to the fact that we have only two speed boats, the balance of the fleet is made up of every imaginable nondescript type of boat, from a one-cylinder canoe to a 25-horsepower family launch. No two boats are alike in any respect, and consequently we were unable to make any classes, and, in fact, no one seemed to know how to classify motor boats, anyhow.

Can you or any of your correspondents give me any suggestions as to how a race should be pulled off that would be reasonably fair to all the entrants?

I read an article some time ago about what was called a Go-Bang Race; where, at a given signal, the boats all started off at top speed, and then at another signal they all started back to the finishing point. Could you put me in touch with someone who could give me the details of how such a race can be handled? C. O. R.

This is one of the hardest questions to answer that you could possibly have put up to us, as up to the present time no absolutely satisfactory method has been devised. The A. P. B. A. rating rule would not be likely to give you satisfactory results. Handicapping on past-performance basis is fairly satisfactory, though it has its drawbacks. One of the bang-and-go-back races which you mention would probably give you the most fun out of racing a mixed fleet.

As I understand the latter racing, the boats are started at a fixed time on a gun. No boat is allowed to hang back, and if she does not cross the line within 15 seconds of gunfire her actual time of crossing is taken and this time added to her finish time, which, of course, prevents soldiering. The boats are run, say, for a stake a mile and a half distant. Before the first boat reaches this stake the committee boat blows the whistle; the time of this whistle not being known beforehand to the contestants, the boats return from where they are in the quickest way they can and get back to the line. Of course, in this way you will have to put the owners on their honor not to touch ignition or carburetor adjustments after the starting gun, but in the Boston Yacht Club this has been accomplished, and I do not think that any owner there would break this rule. The races, of course, are more or less of a scramble, but there is a premium on good handling of the boat—which is to be desired—and they have given lots of fun. Further information could be had from Mr. A. P. Homer, of 150 State street, Boston, Mass.

The past performance or actual speed system of handicapping is managed by running a boat two or three times over a mile course before the race, having her timed by the committee. When her actual speed is known for one mile it is easy to make a just handicap for a race of any number of miles. Here, also, an owner is liable not to show his best speed during the trials. This can be obviated possibly by running boats around a triangular course in the actual race and taking the time of the various boats for handicapping from one leg of this course. The owner not knowing which leg is to be used as a basis for handicapping, and being anxious to win the race, would naturally show his best speed on all legs. In this case handicaps could not be announced until the race was over.

Power for 75-ton Cruiser

BOSTON, MASS.

I have had some discussion with the designers as to the power needed to drive a boat which I am having built at a speed of 9 knots. Although a yacht she is modeled upon the lines of a steam seiner, and will have heavy scantlings. She is 67 feet between perpendiculars, has a displacement of 75 tons and an immersed 'midship section of about 65 square feet area. The lines are as easy as possible in this type of boat. In referring to power I mean, of course, for internal-combustion engines—not steam.

I. J.

For this type of vessel we would recommend a heavy-duty engine (gasolene or kerosene) of at least 90 brake-horsepower to give the speed which you require, although an estimate of this sort without actually seeing the lines must be based solely upon comparison with other vessels of this general type.

The figure given above represents the lower limit of power permissible, in our opinion. The most satisfactory formula for speed of displacement boats is the following:

$$V = \frac{\sqrt[3]{P\,C}}{\frac{2}{3}\sqrt{D}},$$

where P = indicated horsepower, D = displacement, and C = a constant, the value of which varies with the form of the vessel, and must be determined for any given vessel by comparison with others of a similar type. In this case we are taking C equal to 99^3, as this was the constant which gave a satisfactory result in the above formula when applied to a boat of a type and size very similar to yours.

Two or Three-Bladed Propeller?

LOS ANGELES, CAL.

Would you recommend a two or three-bladed propeller for an auxiliary yawl in which the engine is the main element of power? J. T.

The chief consideration is whether you want the boat to be able to sail or not when the engine is not running. If you do, use a two-bladed wheel, so that it can be lined up behind the deadwood when not in use. A three-bladed wheel, on the other hand, is usually more efficient, except when the deadwood is very wide. In that case a two-bladed propeller is more efficient, as its diameter is greater, allowing it to reach solid water not affected by the passage of the hull.

Carrying Tide Up the Sound

RYE, N. Y.

I do not agree with your statement in the Mess Room Talk of January YACHTING, that a 10-mile boat can carry a fair tide from the Race to Larchmont. While the difference in the times of high water at the extremes of the run is about 1 hour 43 minutes, the difference between Falkners and Larchmont, for instance, is only 16 minutes. Neither difference, however, can be taken as a measure of the time a fair tide runs. The current in the Sound turns at about the same time from the Middle Ground east, and only a little later in the western part, so I should think 6.5 hours of fair tide the most that could be counted on. Assuming this time and an average velocity of 1.5 miles, a 10-mile boat would be only 75 miles on her journey when the current turned against her. Under the most favorable conditions this distance might be increased somewhat, but not enough, in my opinion, to make Larchmont. H. W. P.

It is quite true, as you state, that the difference between official high water at the opposite ends of the Sound is not a positive criterion for the action of the surface current. Still, using your own estimate (above) of 6½ hours of fair tide on the run and of 1.5 knots as the average velocity of the tidal stream, we believe that the trick could be done. The boat, traveling over the bottom at an average speed of 11.5 knots, would cover 74.65 nautical miles in the 6½ hours. The distance from the Race (at Little Gull Island) to Execution Rock is 76 nautical miles, and it is a good 1.5 miles less to Larchmont, which gives our boat a margin of safety of .15 mile—close work, but possible.

Freezing of Overflow Pipes

NEW BEDFORD, MASS.

I have a cruising power boat which I leave in the water all winter, but experience considerable difficulty due to the freezing of water in the overflow pipes. Can you tell me through the columns of your Mess Room Talk department how to remedy this trouble? ——

It is not altogether clear what you mean by *overflow pipes*. However, whether they are from sink, cockpit or water-jacket, the remedy is the same, namely, to keep the sea-water from entering them. In case the vent is where it can be reached without hauling the boat out the simplest plan is to drive in a wooden plug from the outside, and then remove the water standing in the pipe (from the inside) by disconnecting same or by siphoning with a rubber tube where this is impossible.

If the vent cannot be got at, and there is no valve just inside the ceiling

which can be shut off (we assume that your question implies that there is none), the problem is not so simple. The most reasonable thing to do in this case would be to take down the piping and plug it on the inside at the connection nearest the ceiling. A wad of oakum or waste might also be forced down to prevent water entering even this last length of pipe. But be sure your main plug is in to stay or you may wake up some fine morning to find your boat at the bottom of the harbor.

Bilge Keels for Sharpies

NEWPORT, R. I.

Please give me an opinion as to bilge keels for a 30-foot sharpie, or some way, without increasing the draft too much, of getting rid of the bulky centerboard trunk that so obstructs the cabin of a boat as narrow (8 feet) as this. I want to keep the light draft characteristic of this type, or I should remove the centerboard and replace it with a keel. The question really is how *little* depth would be effective in holding this shallow (15 inches draft) boat in a beat to windward.

Sailing on Narragansett Bay is often rough. This boat carries her "leg of mutton" sails well, with only 400 pounds lead inside, but a weighted centerboard. The easy handling and general stability of the sharpie seem overlooked of late years, but I think they are well worth exploiting for those who sail their own boats and are more or less governed by cost of building and running. They are easily adapted to motor power, but are smart sailers, and apparently never need carry enough ballast to sink them in case of accident.

P.

It seems to us that you might better build a regular keel on your sharpie than to experiment with bilge keels. You must remember that in the case of the latter it is only the lee bilge keel which will be really effective in preventing side-slipping, and this must be as deep as a keel would be, in order to be as efficient.

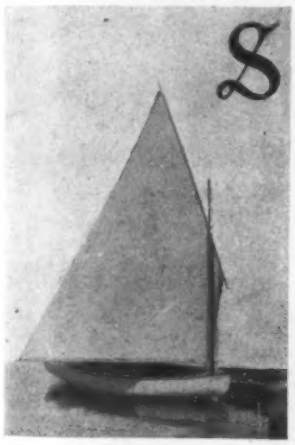
In other words, bilge keels are subject to the same objections as a central keel, but are not nearly so effective for the purpose for which you propose to use them. The shallow bilge keels of steamers are used, as you doubtless know, to decrease rolling, not to prevent leeway. Their resistance is another factor against them.

The only alternative which we are able to suggest is the installation of lee boards, such as are used by the shoal draft craft of the Netherlands.

These are an abomination at sea, but they seem to give satisfaction on inland waters, and have at least the advantage of leaving the cabin free and of being at the same time a form of sliding keel.

We agree with you that the old sharpie is a lot more of a boat than most people realize, and would like nothing better than to see a class of racing sharpies started somewhere on the Sound or on Narragansett Bay. With a heavy rig and sandbag ballast these boats would give some lively sport.

The Racing Dinghy Question



STANDING LUG

SINCE we published, in the October issue of YACHTING, a query from W. S. W., of Boston, in regard to the proper rig for a racing dinghy, this department has been besieged by questions and opinions on the subject from points as far distant from each other as Rochester and the Island of Malta. Dinghy racing is a gamey proposition, and it speaks well for the health of the sport that so many fellows who cannot afford big cruisers and racers are interested in these little chaps, which, after all, give one as exciting an afternoon's race as a larger boat can do.

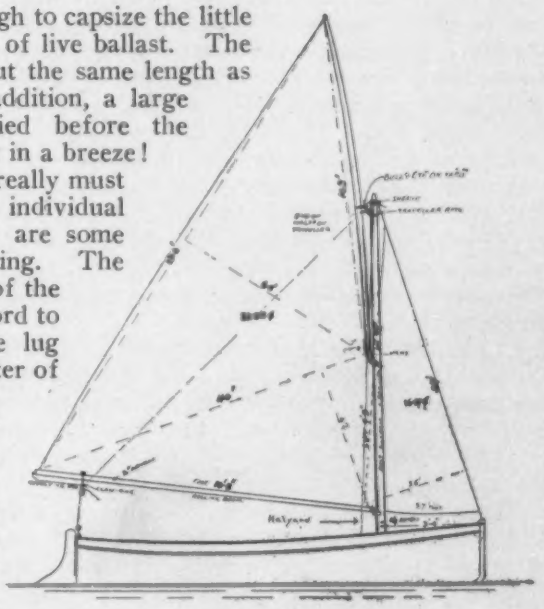
Instead of printing all the letters received about the dinghy, we will try to sum up in one paragraph the salient points of this type of boat and answer, so far as possible, the questions which have given rise to dispute:

(1) *Qualifications.* The racing dinghy is a small, open boat, usually carvel-built, and equipped for rowing as well as for carrying sail. The true racing dinghy has the rudder hung out over the stern on pintles, because it is, strictly speaking, a ship's boat. It is also characteristic of the racing dinghy to carry a press of canvas out of all proportion to the size of the craft. (See photo of Bermuda dinghy, subjoined.) This is because the chief joy of dinghy racing, like that of following the hounds, is in trying to make all possible speed and yet not come a cropper.

To enable them to carry their sail, most dinghies are extremely broad of beam or else have outside ballast. The Boston dinghy which started this discussion was 10 feet long and 5 feet wide. She had, moreover, 550 pounds displacement. The Bermuda dinghy, on the other hand, has more graceful lines, but carries a crescent-shaped false keel about 1 foot deep and weighted with lead. This has attached to it amidships, moreover, a sheet-iron plate, 4 feet long fore and aft and *7 feet deep!* Even so, the weight of the mast, which is nearly twice the length of the boat, is enough to capsize the little ship in the absence of live ballast. The bowsprit is of about the same length as the boat, and, in addition, a large spinnaker is carried before the wind. Some sport in a breeze!

BERMUDA DINGHY

(2) *Rig.* This really must be a matter of individual choice, but there are some points worth noticing. The leg o' mutton sail of the Bermudian can afford to be larger than the lug sail, because its center of effort is so much lower. We advised W. S. W., of Boston, to use a cat rig rather than the lug and foresail, because we believed the former had superior driving power with the sail area undivided; and the main thing is to provide a sporty little ship that will go.



SLIDING GUNTER RIG

A very good compromise, however, is shown in the accompanying drawing of a sliding-gunter rig by Linton Hope, the English designer. This gives the high, narrow mainsail of the Bermuda boats with only a single halyard, but, be it noticed, with a much shorter mast. The halyard passes from the "deck" over a masthead sheave, through a bull's-eye on the yard and back to a traveler-ring, which slides up and down the mast. The end of the halyard is secured to this ring. Thus, one halyard both hoists the sail and peaks it up, as the drawing shows.

Still another rig is the one which is used on most dinghies actually employed as tenders to larger craft—the simple sprit-sail rig, in which the sail has the shape of the ordinary fore-and-aft mainsail, but the peak is held out, not by a gaff, but by a sprit, the inboard end of which is held in place by a becket.

Prospects for 1913 Not in many years has the yachting and boating outlook been as promising at this season as it has been this winter. This is manifest in many ways, but principally in the activity in the larger boat building plants, in the amount of orders received by naval architects for next year's boats and in the excellent market that yacht brokers have found to exist—a market that has been stronger this winter than for some years.

All this means that there will be more boats on the water next year and that the pastime should see a season of great activity. We have heard some pessimistic growls from those who are in a position to know as to the lack of interest that is being taken in the sport as a whole. These seem, however, to be hardly borne out by the facts; 1912 was an excellent year purely from the standpoint of the number of men who took to the water for pleasure. There were more sailboats afloat and more power boats, and while business conditions among the manufacturers may not have been good, it was due to the fact that the phenomenal growth of the power boat had slacked off somewhat from earlier years. This seems, in a measure, to be but natural, especially in an off-business year.

Undoubtedly many newcomers did jump into the pastime when the power boat was first put on the market and thus created an abnormal demand. The demand for this particular class of craft may have fallen off somewhat, but it seems as if the time had arrived when we should look for a healthy growth along permanent lines in this branch of the sport.

The power boat has brought many newcomers into the game, and, from our experience, most of these are sticking and are bringing in others. The bulk of them may not be as great "cranks" on the subject as the average sailing man, but most of them are certainly sticking, and, what is best of all, youngsters are still being attracted to the water, in spite of numerous new diversions on land. Anyhow, a pessimistic view for the coming year seems out of place.

Standing by the Ship In proof of the foregoing, we have plenty of opportunity to judge from our intimate relations with the readers of this magazine. Our mail bag from those who sail with us is a pretty heavy one these days, and there has never been a time when we have had more comment from them than at present. These letters all show a keen interest in boating affairs, are full of intelligent comment, and indicate that the men at present in the game are "live ones," who believe in getting the most out of it that is possible. The series on The Ideal Boat, in particular, has brought many inquiries, most of which indicate that the writers intend to or want to build—a most encouraging sign.

At this time of the year, also, it is most gratifying to see the way the old hands step up and sign on for another voyage when their time expires, most of them without being ashore long enough to get the tar out of their finger nails. Nearly 80 per cent. of the old crew stick their fists on the articles year after year—and let us tell you that is a mighty big percentage. It is encouraging to us here, especially when there are so many distractions ashore and so many ways for a sailor to spend his money foolishly.

New ones are joining the ship, too, faster than ever before, which is a sure sign that the sea isn't losing its "holt." Just this week one man stepped up and signed on for ten whole years—and sent his pay on in advance, too—which looks as if he was pretty sure of not getting over his love of a boat. We believe that such loyalty deserves recognition, and want to thank him here and assure him that his devotion to the game is appreciated. So don't let us hear of any more talk of the good old sport of boating, whether sail or power, being on the decline!

England Getting Defenders in Shape That Maple Leaf IV may again be seen in the international races for the Harmsworth Cup next year seems certain. It will be remembered that while this boat won at Huntington Bay last summer, her speed did not exceed 43½ miles for her actual time over a 30-mile course. Since returning to England, however, some alterations have been made in her, and in a speed trial of six times over a measured half-nautical-mile course off Cowes she is said to have obtained a mean speed of 51.96 statute miles an hour. With this boat in the lists Americans will have a pretty definite idea of what speed they will have to obtain to bring the cup back to this country. This need not discourage us, however, as it is probable that one or two boats now in existence can still give Maple Leaf a pretty good race, if properly handled, while next year's crop should be able to equal her claimed speed, even leaving out the 60 and 70-milers about which we heard so much last year. Another English trophy defender, Mr. Hollingsworth's Crusader, is well along, and is expected to be overboard this month. So it begins to look as if England will be prepared for us when August comes.

A Discussion on the Hydroplane Question There is at present no subject that is agitating motor boat racing circles as much as the place that the hydroplane is to occupy in the sport and the comparative value of the different types of "planes" that have made their appearance in the last two years. The discussion between the advocates of the single plane and the multiple plane types is still very keen, and each has many advocates. So many confusing and unauthorized statements have been made concerning the various types that we have arranged for an intelligent exposition of the question in the March issue of YACHTING, in which the various types will be discussed, the claims of each being presented by those who are recognized authorities on the type of which they write. In the March number Mr. Clinton H. Crane will discuss the type which he has made famous in such record-breaking boats as Dixie IV, Ankle Deep, P. D. Q. II, etc.

The March Issue of Yachting is the Annual Boat-For-Sale Number—It Will Give You the First Line on the Best Offerings of the Year—READ IT!

Drift wood from Alongshore

HARLEM YACHT CLUB, CITY ISLAND, N. Y.

Officers for the Harlem Yacht Club for 1913

The regular meeting of the Harlem Yacht Club was held in New York on January 4, and the following officers were elected for the coming year: Commodore, Fred. D. Newton; vice-commodore, Alan Gibson; rear commodore, Newell L. Mead, Jr.; treasurer, John F. Jarchow; financial secretary, Joseph C. Fegan; recording secretary, Edw. Schmidt; measurer, John Wimmer; fleet surgeon, Dr. T. A. Martin; chairman race committee, Walter S. Sullivan; trustees for two years, F. W. Burdick, John A. Crowley, K. F. J. Seifert, Jr.

The reports of the treasurer, financial secretary and chairman of house committee were excellent ones, and showed the club to be in a very flourishing condition and free from all debt. The club owns its own property at City Island with water front rights, which is rather an unusual thing in a club with 138 members where the dues are moderate.

The Harlem Yacht Club offers many advantages to its members, a very large percentage of whom are boat owners. On the club property are ways with storage facilities for at least sixty boats, so that members may have their yachts hauled out, stored and put into commission on their own property at a small expense. The anchorage at City Island is an excellent one and well protected.

Sonder Races in 1913

It has been announced that the fifth series of international sonder yacht races will be held next September off Marblehead. The international contest between Germany and America for this type of boat now stands three American victories to one German.

As in the four previous contests, the races will be sailed under the joint management of the Kaiserlicher Yacht Club, of Kiel, and the Eastern Yacht Club, of Boston, and according to the rules of the International Yacht Racing Union. There will be at least five races.

The American trials will be held off Marblehead beginning August 16, 1913, with the first international race in the same waters on September 1. The American trial races will be open to the yachts of any organized American yacht club, and the entries will close on July 19, 1913, with Henry Howard, chairman of the German-American Race Committee, in this city. Entries will be restricted to boats completed and launched.

New Officers of Motor Boat Club of America

At the annual meeting of the Motor Boat Club of America these officers were elected for 1913: Commodore, H. H. Melville; vice-commodore, F. K. Burnham; rear commodore, James Elverson, Jr.; secretary, F. N. Morley; treasurer, Charles Francis; trustees, T. F. Chesebrough, Pliny Fisk, James A. Blair, Jr., Morris M. Whitaker, John M. Shaw, F. C. Havens, Henry R. Sutphen, Joseph H. Hoadley and J. Stuart Blackton.

San Francisco to Have International Race in 1915

In connection with the Panama-Pacific Exposition in 1915, there promises to be an international race of unusual interest. Sir Thomas Lipton has entered his 23-meter Shamrock IV, and promises to send her or a new boat of the same size to the Pacific Coast. San Francisco will be represented, and a syndicate has already raised $200,000 for a sloop, and Southern California will send a boat from San Pedro.

The San Francisco boat is to be sloop rigged, on similar lines to the famous Shamrocks and other modern boats of that class. The dimensions at present considered are as follows: Length over all, 120 feet; waterline, 75 feet; beam, 22 feet; draft, 20 feet. These measurements are about 50 per cent larger than the schooner yacht Seafarer, which is the largest yacht on the bay at the present time.

Organization of the Sheepshead Bay Motor Boat Club

At a meeting held at the residence of Theodore K. Hastings, 501 Westminster Road, Flatbush, on Thursday, October 31, the Sheepshead Bay Motor Boat Club was organized for the advancement and support of motor boating and to promote social intercourse among its members during the summer and winter seasons.

The following officers were elected: Commodore, J. R. Pratt; vice-commodore, Alfred H. Hutter; rear commodore, Frank O. Callaghan; fleet captain, T. K. Hastings; secretary, H. H. Heyman; treasurer, Frank G. Orr.

The fleet consists of the following sea-going cruisers: The Rudder, 45 feet; Mollie, 40 feet; Wanda, 36 feet; Cachalot, 30 feet; Ida Kno, 29 feet; Virgi, 29 feet; Prattie, 29 feet, as well as several launches. Secretary Heyman presented the club with two sterling silver loving cups to be contested for as arranged by the regatta committee, and Captain F. G. Orr offers his launch Rainbow as a power tender for the club. The purchase of a house boat for club station is already under way. Applications for membership may be made to Secretary H. H. Heyman, 121 Worth street, New York.

Officers of East Greenwich Yacht Club

At the annual meeting of the East Greenwich Yacht Club the following officers were elected: Commodore, Henry E. Allen, yacht Viati III; vice-commodore, L. W. Dugdale, yacht Iola D.; rear commodore, Samuel C. Bailey, yacht Beatrice; secretary, F. S. Nock; treasurer, Alexander P. McCabe; fleet captain, Melville A. Newcomb, yacht Ibis; fleet surgeon, William H. Peters, M. D.; trustees, W. H. Taylor and F. C. Church; house committee, M. A. Newcomb, chairman; Milton G. Allen, John Hocking and A. P. McCabe; regatta committee, Walter Sherwood, chairman; William Nason, Joseph Lawton, T. M. Allen and T. Clarke Brown, Jr.; representatives to Narragansett Bay Yacht Racing Association, Walter H. Sherwood, William Nason and Joseph Lawton; membership committee, William H. Heald, Thomas Hussey, Dana Lawrence and G. F. Brownell; measurer, F. S. Nock.

The Chicago Yacht Club Pays a Compliment to Eastern Yachtsmen

When the Michicago captured the Manhasset Bay Challenge Cup last summer she was just from the builder's yard, and was sailed in this series by A. H. W. Johnson and a crew largely made up of Long Island Sound sailors. In recognition of the services of this crew the Chicago Yacht Club recently adopted the following resolutions, and has presented each member of the crew with a gold emblem as a token of the club's appreciation:

"In the series of races for the Manhasset Bay Challenge Cup, sailed on Long Island Sound, on June 24, 25 and 26, 1912, the yacht Michicago, representing the Chicago Yacht Club, defeated its four competitors, the Joyant, the Corinthian, the Cara-Mia and the Windward, the best of their

class on salt water. This result may be attributed in no small measure to the skillful handling of the Michicago by A. H. W. Johnson and his crew.

"Be it Therefore Resolved, That our secretary be and is hereby requested to express to Mr. Johnson and to the Messrs. James D. Sparkman, Butler Whiting and Ogden T. McClurg, the Corinthian members of his crew, our hearty congratulations."

New York Yacht Club Elects Officers

At the annual election of the New York Yacht Club, held recently at its club house in West Forty-fourth street, these officers were elected to serve for 1913: Commodore, Dallas B. Pratt; vice-commodore, George F. Baker, Jr.; rear commodore, J. P. Morgan, Jr.; secretary, George A. Cormack; treasurer, Tarrant Putnam; regatta committee, H. de B. Parsons, Joseph M. Macdonough and C. Sherman Hoyt; measurer, William Hallock; committee on admissions, William Butler Duncan, Henry A. Bishop, Harold S. Vanderbilt, Fred. L. Sawyer, U. S. N., and Charles Lane Poor; house committee, Thomas A. Bronson, Samuel A. Brown and James F. Carter, U. S. N.; library committee, Henry B. Kane, Charles A. Lee and James D. Sparkman; model committee, John Neilson, F. M. Hoyt and W. Harry McGill; committee on anchorages, No. 2, J. P. Morgan, Jr.; No. 3, Robert E. Tod; No. 4, W. C. Brown; No. 5, Charles Lane Poor; No. 6, A. C. James; No. 7, George F. Baker, Jr., and No. 10, J. Harvey Ladew.

Lots of Work at Herreshoff's

Eighteen yachts are being built at the Herreshoff shops. This is a larger number of vessels than has been turned out in nine years, and as the building season is still young it is expected that more orders will be received before the close of the year.

Among these are nine of the new class of 46-foot sloops for members of the New York Yacht Club (two additional ones having been recently ordered), two large schooners, one for Harold S. Vanderbilt and one for a well-known yachtsman, and some smaller craft. The Vanderbilt schooner is for Class D. It will be built of steel. A new motor boat has been built for John B. Herreshoff, which is 62 feet long. In a series of trials last week this boat made 14 miles an hour.

The Corinthian Yacht Club of Philadelphia

The following were elected to the various positions to be filled in the Corinthian Yacht Club at the annual meeting held January 13, 1913: For trustees, to serve for three years, to succeed J. Willis Martin and Edward C. Dale, whose terms of office expire, George Breed, Sydney G. Fisher; for commodore, George W. Childs Drexel, steam yacht Alcedo; for vice-commodore, Eli Kirk Price, schooner Clarissa; for rear-commodore, Walter Lippincott, motor yacht Lady Betty; for secretary and treasurer, Addison F. Bancroft; for measurer, J. Murray Watts; for race committee, Charles D. Mower, Charles Longstreth, A. F. Bancroft.

Annual Meeting of the Stuyvesant Y. C.

At the annual meeting of the Stuyvesant Yacht Club, Pelham Bay Park, N. Y., held January 8, the following officers were elected for the ensuing year: Commodore, Edward J. Sause; vice-commodore, J. A. Muller; rear commodore, F. H. Hegler; treasurer, C. S. Ogden; recording secretary, George A. Liptay; financial secretary, W. L. Cree; measurer, C. H. Clapper; fleet surgeon, J. F. Nelson, M. D.; fleet chaplain, H. C. Fiske. Board of directors, H. Ludwig, Joseph E. Dobbs, P. McHugh, W. C. Cartwright, J. H. Jones; regatta committee, H. P. Fiske, Frank Barry, A. H. Ackerman, George A. Liptay, J. A. Aitken; law committee, A. P. Delcambre, E. J. Krug; auditing committee, J. L. Filby, E. A. Nelson, W. Hansen; membership committee, Fred. Schottky, C. S. Ogden, Paul Brachman.

Spring Regatta at St. Augustine

At a recent meeting of the St. Augustine Power Boat Club the members heartily endorsed the idea of again holding a spring regatta for power boats next April. The matter was discussed in detail, and it was deemed best from every standpoint to continue these spring speed boat races, which in the past have proved so successful and which have attracted many boats to St. Augustine.

Many New Yachts Building

Three steam yachts are now being built at the yards of the Gas Engine & Power Company, at Morris Heights, which are to be ready by the opening of the season. The largest of these is 170 feet long. More work is now being done at Morris Heights than has been in progress at this time of year for a long while. In addition to these steamers several motor boats have been contracted for. One is a 60-foot mahogany boat for George H. Walker, of St. Louis, who will use the yacht for service at his summer home at Kennebunkport, Me. This boat is to be equipped with two six-cylinder, 6 by 6 Speedway motors, and 21 miles an hour is guaranteed. Several boats, finished in the usual Gas Engine style, are being built especially for the coming motor boat exhibitions. An order has also been placed with this firm for a 65-foot twin-screw power yacht for Mrs. J. C. Campbell, of the Columbia Yacht Club.

George Owen has designed a 31 rater, which will be owned in Providence. The new yacht will race off Marblehead during the Corinthian Club's midsummer series.

A Correction

In our January number appeared the plans of a 20-foot hydroplane designed by John A. Connolly, Jr., for Mr. H. S. Ford. In giving us the plans the architect stated that the boat was to be equipped with a 90-H. P. Van Blerck motor. We have learned since, however, that the owner made a change in this and installed a 100-H. P. Sterling in the boat instead.

Melrose Yacht Club

The annual election and installation of officers of the Melrose Yacht Club was held in the club house, Barretto Point, on January 4. The following officers were elected: Commodore, J. F. Doepker; vice-commodore, Edw. Hammer; rear commodore, H. Sounick; treasurer, Edw. Fleischer; financial secretary, H. R. Schmidt; recording secretary, John Hoffman; chairman house committee, William B. Greason; sergeant-at-arms, Fred. Berg. After the ceremonies dinner was served, and all agreed that the club had had a very successful season.

Bronx County Yacht Club Elects Officers

The officers of the Bronx County Yacht Club, formerly known as the Clason Point Yacht Club, for the year 1913 will be: Commodore, James Hammill; vice-commodore, Harry McNeil; rear commodore, William Effinger; recording secretary, Charles Metscher; financial secretary, Stanley Warose; treasurer, William C. Butler; members board of directors, for two years, John Anderson and Harry McAvoy; for one year, William Brown and John M. Graham.

Some Recent Sales and Charters

The fall and early winter market in yachts has been very brisk, and most of the yacht brokers report a better demand for yachts at this time of the year than for a long time. The following are some of the recent transfers that have been announced:

Through the agency of Tams, Lemoine & Crane has been sold the three-masted steam auxiliary schooner yacht Invincible for the estate of the late Herbert G. Squiers, former Minister to Cuba and Panama, to Theodore N. Vail, president of the American Telephone & Telegraph Company. The Invincible is well known on this coast, having been formerly named Intrepid, and has been abroad for the last few years. She will be seen in these waters next summer. She is 163 feet over all, 27 feet beam, 13 feet 5 inches draft.

Among other interesting transfers reported by this firm are the schooner yachts Westward, to a German syndicate headed by Albert Ballin, of the Hamburg-American Steamship Company, and the steam yacht Liberty.

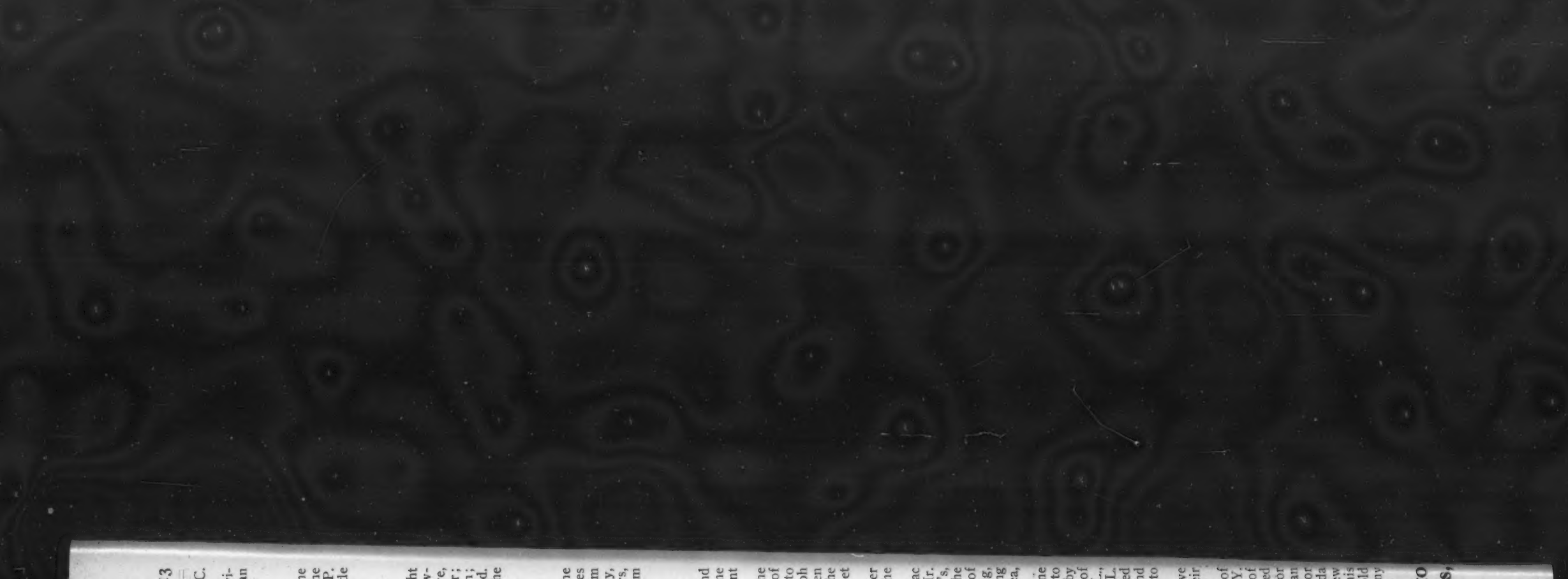
The steam yacht Virginia, belonging to the estate of the late Isaac Stern, has been chartered by Messrs. Tams, Lemoine & Crane to Mr. George Eastman, of Rochester. The yacht is now fitting out at Tebo's, and will sail in a short time for a cruise to Panama, West Indies. etc. She is being equipped with wireless. The Virginia is one of the best known of the larger ocean-going steam yachts on this coast. She is 200 feet long, 25 feet beam, 12 feet draft. She has probably done more foreign cruising than any yacht of her size, having been to the Mediterranean, North Sea, Baltic, all through European waters, and up the Amazon River.

The Hollis Burgess Yacht Agency has sold the 35-foot waterline auxiliary yawl Rebecca, owned by Dr. Coleman Tousey, of Boston, to W. E. Scull, of Philadelphia; the 25-foot waterline yawl Spectre, owned by Russell S. Paine, of Worcester, Mass., to Prof. George E. Russell, of Roslindale, Mass.; the 25-foot waterline auxiliary knockabout Annie L., owned by Commodore William F. Oburg, of Winthrop, Mass., to Frank L. Mott, of Buffalo, N. Y.; the 25-foot waterline sloop yacht Mignon, owned by E. A. Coupal, of South Boston, to E. A. Nelson, of New York, and the knockabout Edythe, owned by F. H. Davis, of Cambridge, Mass., to C. P. Cottrell, of Westerly, R. I.

Messrs. Cox & Stevens, of New York, report an unusually active market for the purchase and charter of yachts of all types. Among their recent transactions are the following:

One hundred-foot cruising power yacht Mona, sold for estate of William Campbell Clark, of Newark, N. J., to Uzal H. McCarter, N. Y. Y. C.; 81-foot gasolene cruiser Faalua, sold for Sherburn M. Becker, of New York, to Edwin J. Steiner, of New York, her name will be changed to Wanderlust; 105-foot auxiliary schooner yacht Haida, chartered for Max Fleischmann, N. Y. Y. C., to a prominent Philadelphia yachtsman for Southern cruising; 105-foot gasolene houseboat, Captiva, chartered for Payne Whitney, N. Y. Y. C., to E. Mapes, who is now cruising in Florida waters; 70-foot power yacht Gladiola, sold for George B. Spearin, of New York, to Coburn Haskell, of Cleveland, Ohio, who will use her at his summer home at Blue Hill, Me.; 70-foot gasolene yacht Wanderlust, sold for Edwin J. Steiner, of New York, to Albert C. Middleton, and many others.

The New York Motor Boat Show will be held at Madison Square Garden, February 15th to 22nd. The March Issue of YACHTING will contain a review of all the exhibits of boats, engines and accessories seen there.



The Latest in Boats, Engines and Accessories as Seen at the Boston Show

Keep this Special Review of 1913 Products for Reference Purposes Throughout the Year. It Will Prove of Value to You

FOREWORD

IT is just ten years ago since that little group of men who foresaw in the advent of the internal-combustion engine the opportunities it offered for marine use got together and decided to hold an exposition in order to show the public of what this comparatively new form of power was capable. This first exhibition began in a small way as a sort of side-show to the annual Boston Automobile Show, which was just then becoming an annual fixture, and for several years it attracted very little attention. These men had faith in their proposition, however, the marine engine industry grew, and in a few years they were able to swing a show of their own, devoted entirely to the exhibition of boats and engines and other products pertaining to them. It was a small beginning, and, as is usual, the earlier efforts were devoted chiefly to developing the new power for pleasure purposes, the yachtsmen and boatmen paying the way to the perfection that must come before any new thing is taken up for commercial purposes.

For a while the boom in craft of this type was tremendous, as many men were drawn into the boating pastime who had never before taken it up. Since that early beginning the annual shows have kept pace with the growth of the industry, and while the unusual demand for boats with an engine of this type has been somewhat sated, a healthier, steadier growth is now going on—a growth that bids fair to increase each year as sail and steam go out for commercial vessels, and as new men are drawn into the game for pleasure purposes—for each year sees many men buying their first power boat, and most of those that are once inoculated find it hard to get the virus out of their systems.

As tangible proof of this one can point to the present success of the big motor boat shows, where undoubtedly more real interest is shown with each succeeding year. The big Eastern shows have come to be a real part of the boating season, and "bugs" and "shellbacks" alike take them in and look over the improvements of the year critically and study build and design in an intelligent way. In this respect a great difference is noticed in the present motor boat crowds over those of a few years ago. In the Boston Show in particular a large percentage of the attendance is of actual owners and users of gasolene engines. Many of these make a living by them, owing to the fact that the local commerce of the New England coast is largely carried on by means of internal-combustion engines. It is no uncommon sight to see a Maine lobsterman, Gloucester fisherman, or a Massachusetts Bay work-boatman looking over carefully every new design and pulling out a wad of greenbacks to pay a deposit on his purchases. Some complaint has been made that the shows are not always business-getters; but, nevertheless, they bring the manufacturer and the user in closer touch than in any other way and give the boat owner a chance to study comprehensively the trend of improvement in both boats and engines.

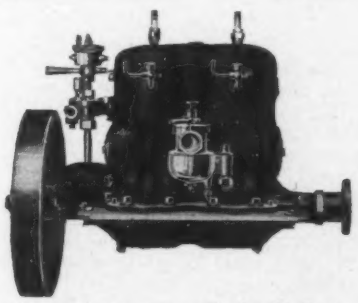
ENGINES FOR ALL KINDS OF WORK

Gray Motors for 1913

One of the largest engine exhibits at the Boston Show will be that of the Gray Motor Company, of 2308 Gray Motor Building, Detroit, Mich. Here will be seen practically a complete line of these well-known motors, with the latest 1913 improvements.

The Gray Model "U," which was put on the market for the first time in 1912, and which proved to be one of the most popular models ever brought out by this company, will again be seen in the same sizes and with the same equipment. The single-cylinder Model "U," rated at 3 horsepower, with a bore of 3½ by stroke of 3½, weighs 89 pounds. It is equipped with standard Krice carburetor, and has elevated timer control and rotary pump. The Model "U" is a three-port motor. It is free from valves and is a very efficient machine at high speed. The usual objection to a three-port motor has been overcome in the Gray Model "U" by incorporating in its design a special device in the by-pass which absolutely prevents back-firing.

The 6-horsepower Model "U," cut of which is shown here, is a double-cylinder machine with the cylinders cast *enbloc*. The cylinder dimensions are the same as the 3-horsepower; machine weighs 138 pounds. This particular model was especially designed to meet the demand for a small, light-weight, smooth-running, two-cylinder engine that could be installed in lightly constructed launches, power canoes and dinghys. Simplicity is the keynote of its design. This model is equipped with the standard Krice Carburetor. Both the single and double-cylinder Model "U's," like every other engine in the Gray line, will be lubricated through the gasolene, a system that has proved most satisfactory and easy to care for.



Two-cylinder, 6-h.p. Model U Gray

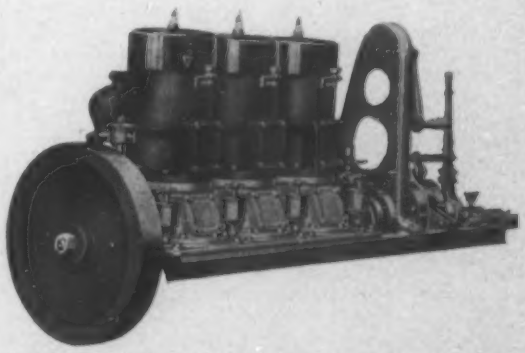
Probably one of the best-known marine engines that is put out by any manufacturer is the Gray Model "R." For 1913 the Model "R" line will consist of a single-cylinder, 4½-horsepower, cut of which is shown, and 6-horsepower, double-cylinder 9 horsepower and 12 horsepower. The smaller one has a bore 4 inches by stroke of 4 inches, and weighs 190 pounds. This single-cylinder "R" is a little slower speed machine than the Model "U," and is recommended for use in boats of slightly heavier construction, and make an excellent power plant in small work boats, auxiliaries, boats of the wide beam dory type, etc. The engine is of the two-port type, having vertical check valve.

The 6-horsepower Model "R" has a bore 4¾ by stroke of 4, and weighs 225 pounds. Equipment is same as 4½ horsepower, and design is the same in every detail, and it is an engine that meets the requirements in a great many kinds of service. All parts are interchangeable. A new addition to the Model "R" line is a double-cylinder 9-horsepower, which was brought for 1913 by the big demand from Gray agents and customers for a double-cylinder engine of about this power. This engine has a bore and stroke of 4 by 4, and weighs 290 pounds.

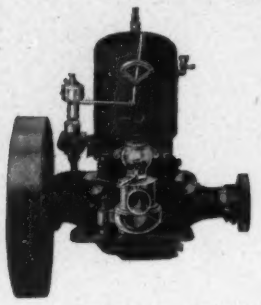
The 12-horsepower, two-cylinder Model "R," which has a bore of 4¾ by stroke of 4, weighs 340 pounds, and is an engine that has made itself famous in power tests at various times. The Gray Company says that at different universities of the United States this 12-horsepower when tested out in their experimental laboratories has developed all the way from 13 to 18 horsepower.

The Model "T" line, which is offered in 7, 8 and 12-horsepower, single cylinder; 14, 16 and 24-horsepower, double cylinder, and 21 and 36-horsepower, three cylinder, was the first model in the Gray line designed to lubricate through the gasolene. The Gray Model "T" has been known as one of the most accessible marine engines ever built. It is a combination two and three-port motor, and is designed to operate on either kerosene or gasolene. Regularly furnished it is equipped with the regular gasolene carburetor, but should the operator desire at any future time the patented Gray Kerosene Injector System can be applied.

The 14, 16, 21, 24 and 36-horsepower motor will



New three-cylinder, 36-h.p. Model T Gray motor, equipped with elevated rear starter and reverse gear



4½-h.p. Model R single-cylinder Gray motor

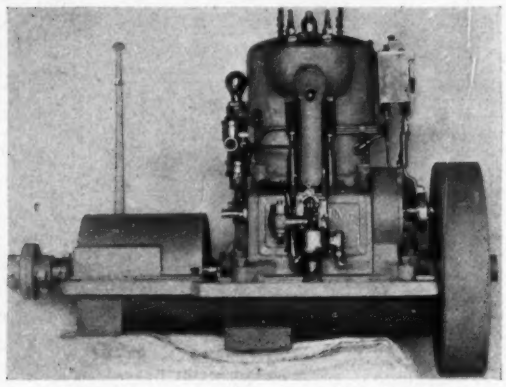
be furnished as unit power plants with reverse gear mounted on extended base and Bosch high-tension magneto attached. A special feature of the 1913 Gray line will be the 36-horsepower, equipped with Bosch magneto and with Paragon clutch and rear starter. Special advance literature on this model can be had from the Gray Company.

Up-to-Date Sterling Engines

Unusual interest will be added to the Sterling Engine Company's exhibit at the motor boat shows this year because of the remarkable success of this famous engine in all of the country's racing and cruising events the past season. The Baby II, equipped with a 150-horsepower Sterling, was by far the most successful power boat of the year. It made practically a clean sweep of the entire country.

In addition to the engine in the Baby there will be shown another 150-horsepower racing motor at the shows similar to those driving the Ankle Deep, Tech Junior, Baby Reliance III, Neptune III and other famous boats.

An entirely new Sterling engine, designed espe-



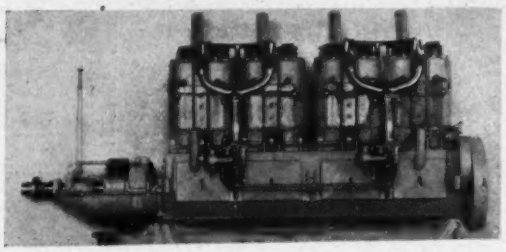
Two-cylinder, 12-15-h.p., heavy-duty Sterling

cially for small, high-grade yacht tenders, is a four-cylinder, four-cycle motor, embodying the latest improvements in design and built of the very best material obtainable. It is an engine that yacht owners have been waiting for—small, compact, powerful and light—and an engine that a woman or child would take delight in operating. It is a remarkably clean little motor and its appearance is very striking. The usual Sterling quality is evidenced throughout its entire construction.

Another innovation at the Sterling exhibit will be one of the six-cylinder, 45-75-horsepower medium-duty and speed engines, laid bare for the close inspection of the public. This is a 5½ by 6-inch motor of the same type that powered the Dixie Junior hydroplanes, and motor boat enthusiasts will be given an unusual opportunity to examine the inside working parts of a highly successful four-cycle engine and of discussing the merits of its design with practical engineers. This engine is driving the finest cruisers and yachts in the country besides powering some of the fastest speed boats.

The line of Sterling engines at the Boston Show, in addition to those mentioned, will include the following machines:

12-15 horsepower, two cylinders, heavy duty.
25-35 horsepower, four cylinders, heavy duty.
40 horsepower, four cylinders, heavy duty.
18-25 horsepower, four cylinders, medium duty and speed, aluminum base.
25 horsepower, four cylinders, medium duty, iron base.



Intake side eight-cylinder, 150-h.p. Sterling racing engine

30-50 horsepower, four cylinders, medium duty and speed, aluminum base.
45-75 horsepower, six cylinders, medium duty and speed, aluminum base.

The handsome new catalogue of the Sterling Engine Company, of 1258 Niagara street, Buffalo, is now ready for distribution.

Wolverine—The Motor with the Bore and Stroke

The Wolverine Motor Works, of Bridgeport, Conn., exhibit at the Boston Show, in spaces 29 and 30, the following well-known Wolverine engines: One 50 horsepower, three cylinders; one either 27 or 36 horsepower, three cylinders; one 18 horsepower, three cylinders; one 12 horsepower, two-cylinder Special Model "B"; one 5-horsepower, single-cylinder special engine with reverse clutch.

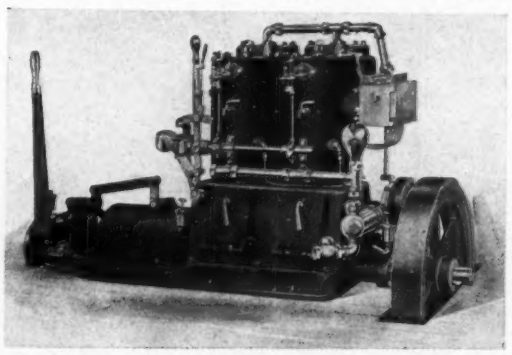
The Wolverine is known as a heavy-duty engine, not intended for racing purpose, but in an endurance test can be depended upon always to reach the goal.

One feature peculiar to the Wolverine is the large bore and stroke, hence the slogan adopted by the company, "The Motor with the Bore and Stroke." This is a point that should have the consideration of the discriminating buyer. The company says that, per cubic inch of piston displacement, Wolverine engines are as low in price, and in some cases lower in price, than the so-called cheap engines on the market.

In design and construction nothing has been slighted which would add to efficiency. This has sometimes added to the cost of manufacture but is of advantage to the purchaser. The bearings are of ample length and diameter to withstand the strains to which they are subjected, and the very marked degree to which accessibility to all moving parts has been carried is of immense value to the operator. Large units of construction have been carefully avoided, insuring to the purchaser low cost of replacement of component parts, reducing upkeep to the minimum. They are a four-cycle engine, and are made in from 5 to 100 horsepower, the 12 horsepower being a two-cylinder engine and all the other sizes three-cylinders. The normal speed of the different sizes varies from 280 to 400 revolutions per minute.

Wolverine engines are fitted with mechanically-operated inlet and exhaust valves, making a positive and efficient method of controlling the inlet of gas and removal of the products of combustion.

A feature which has made for the popularity of the Wolverine is that of flexibility. The combination of mechanical regulation of the ignition and admission of fuel to the motor makes it pos-



Two-cylinder, four-cycle Wolverine motor, rated h.p. 12

sible to control absolutely, at slow speeds, the movement of a vessel among crowded shipping, in oyster dredging, in making landings, or in any situation where freedom from missing impulses through cylinders missing fire must be assured.

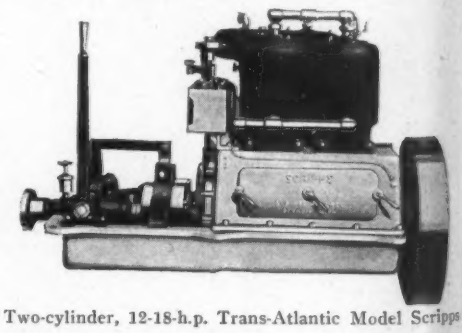
These engines have been developed along lines which tend towards keeping them in the front rank when it comes to economy in operation. For commercial use Wolverine engines have proved themselves money-makers, not money-spenders.

The question of fuel is an important one at present on account of the soaring prices of oils, and Wolverine engines use successfully kerosene, distillates, and many of the so-called "fuel oils" known in different parts of the world by such names as Solar Oil, Blue Oil, Green Oil, Texas Oil, Coal Oil, Foltzer Oil, Kudrum Oil, Masut Oil, Astatka, Petrolite, Water Lily Brand, Victoria and Oriental.

In the larger sizes, Wolverine engines are being operated successfully on gas generated from suction producers using anthracite coal, charcoal and coke. This fuel has been tested out in these engines under actual working conditions, and has proved to be very successful, both as to flexibility of the engines and economy in cost for fuel, both in the United States and abroad.

To show the wide demand for Wolverine engines, it may be cited that they are very largely used in the fisheries of Denmark, Norway and Iceland. In the United States, in the Columbia River salmon fisheries, will be found any number of them used by what are termed the "lone star" fishermen. They are so named because of the fact that boats which were formerly propelled by sails and oars, requiring the services of two men, are now equipped with Wolverine engines, enabling the owners to go out alone and reap all the profits themselves. Some of the largest fishing companies on the Great Lakes and on the Atlantic Coast have their fleets equipped with these engines. In Central and South America, in the banana industry, Wolverine engines have almost entirely supplanted steam, and, in fact, most of the gas engines used in the largest fruit companies are of this make.

Wolverine engines have also an enviable reputation on account of their suitability for pleasure boats. A houseboat at Jacksonville, Fla., equipped with two 27-horsepower Wolverine engines ha been in operation since 1902. A cruiser, equipped with a 50-horsepower and used on Lake Michigan during the summer, has been in operation for a number of years, and after it had been in use for four years the engineer wrote the company that the engine was in good shape, and that he had not paid out one cent for repairs. Some of the first Wolverine engines built are still said to be doing satisfactory work for their owners.

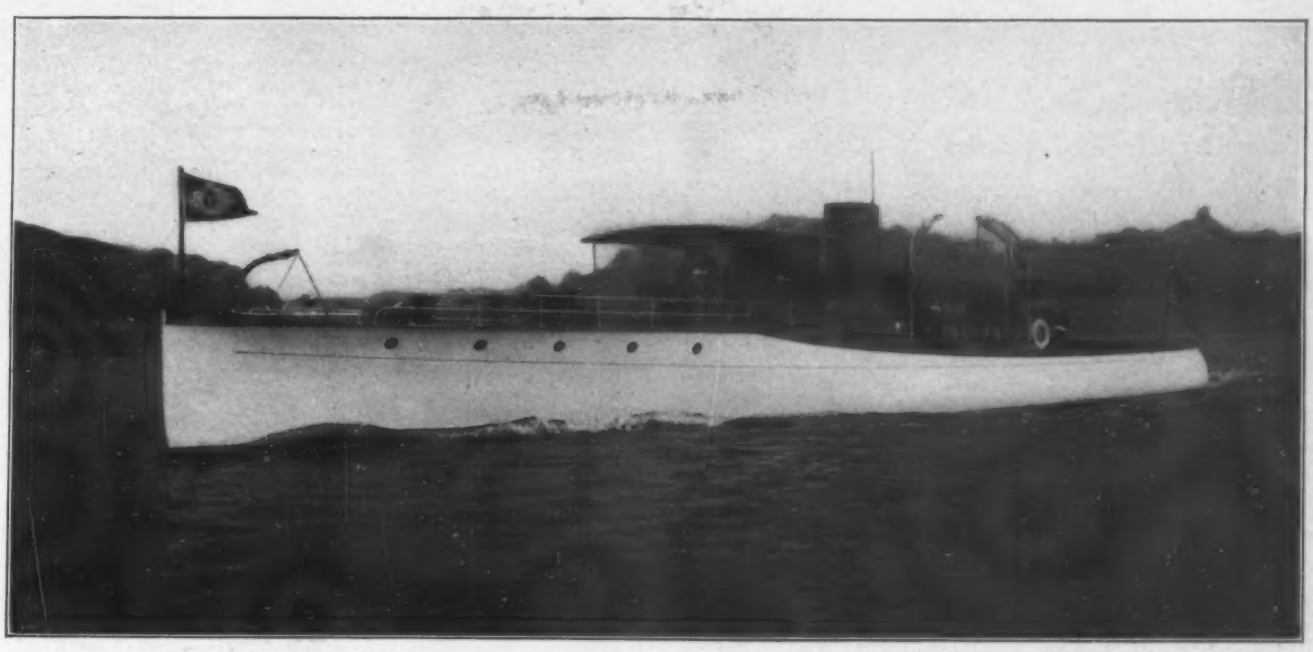


Two-cylinder, 12-18-h.p. Trans-Atlantic Model Scripps

Scripps Motors

One of the interesting exhibits at the Boston Show will be that of the Scripps Motor Company of Detroit, Mich., which will be in charge of Mr. Walter H. Moreton, who, it will be remembered, was assistant engineer of the little 35-foot Detroit when it made the passage across the Atlantic to St. Petersburg last summer. This boat was equipped with a Scripps engine. Mr. Moreton is now located at Boston, as the New England representative of the Scripps Motor Company.

The Scripps motor is made in extreme heavy duty, semi-speed and medium-duty types in eleven



Of course, it's varnished with

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VALSPAR

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No other varnish is good enough.

It is not mere chance that Valspar is used almost exclusively on the largest and fastest yachts afloat.

It is because the owners have learned that no other varnish can give the service that Valspar does.

Valspar will free you from many of the varnish evils which you have heretofore considered unavoidable.

It will positively not turn white. It will not even scratch white under foot.

It is a ***durable,*** quick-drying varnish.

The leading speed boats and yachts are Valsparred nowadays. The "Speejacks," shown above, owned by Mr. A. Y. Gowan, and considered the fastest boat of its kind afloat, is just another typical instance.

Sample of Valspar will be sent free upon request. Use the coupon.

See our exhibits showing actual tests at the Motor Boat Shows.

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sizes. The heavy-duty sizes are 7½ inches bore by 9 inches stroke, in 2, 4 and 6 cylinders, with a range of from 24 to 96 horsepower, at 350 to 450 revolutions per minute. The semi-speed and medium-duty types come in from 1 to 6 cylinders, in 4½ inches by 5 inches, and 5½ inches by 6 inches bore and stroke, in from 6 to 72 horsepower. The motors to be seen at the Show are the following:

One model "A," single-cylinder, 4½ by 5; 4½ to 6 horsepower.

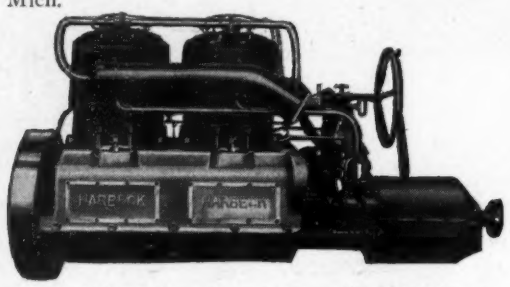
One model "H," four-cylinder, 4½ by 5; 18 to 30 horsepower.

One model "L," two-cylinder, 5½ by 6; 12 to 18 horsepower.

The model "L," two-cylinder, 12 to 18 horsepower, is the exact duplicate of the motor with which the Detroit was equipped in her trans-Atlantic passage, and for that reason will undoubtedly arouse much interest.

In material, finish and workmanship the Scripps four-cycle motors are of an exceptionally high class, and have demonstrated in all kinds of service their ability to "stand up," and it is not alone the record-breaking voyage of 6,008 miles of the Detroit which attests this fact.

The 1913 Scripps catalogue, describing these motors may be had by addressing the Scripps Motor Company, 657 Lincoln avenue, Detroit, Mich.



The Harbeck 4-cylinder, 7½" x 8½" refined motor

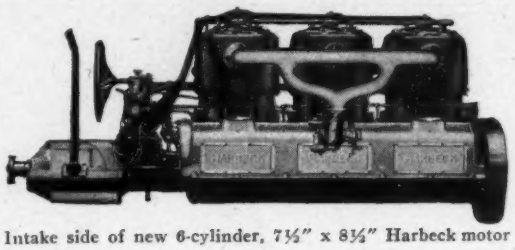
The Harbeck—A New Motor of Unusual Refinement

A new engine has entered the high-power marine field—a big, healthy engine manufactured by the Harbeck Motor Company, of 2032 Dominic street, Chicago, Ill. Though it contains no radical departures from accepted four-cycle design, it embodies all the refinements that the last two years have proved to be worth while. It is produced in two models, one of four cylinders, the other of six, both having a bore of 7½ inches with an 8½-inch stroke, normal rotation speeds being from 350 to 650.

In appearance the engines are extremely clean and neat, all accessories being assembled in a group at the after end of the motor. This, coupled with the fact that the engine is free from external shafting and piping, makes the interior and all working parts peculiarly accessible. In this feature the designers seem to have sought to make a great improvement over the closed crank-case type of engine heretofore produced. They claim that any repair that could possibly be necessary can be made in the most cramped installations without disassembling the engine, and as an example cite the fact that as an experiment a complete set of main bearings has been removed and replaced with new ones in three hours.

A further noticeable feature is the lubrication system employed. This is exactly similar to that used in the 1913 Pierce-Arrow motors, where the oil is forced to the main bearings under high pressure (indicated by a gage), is then conveyed through the hollow crankshaft to the crank-pin bearings, and from them is thrown to the cylinder walls. This system is automatic, and eliminates troubles from smoke, oil cups, etc. As an additional improvement, the oil is carried not in the crank-case, but in a tank, which permits of a large enough supply to obviate heating and constant replenishing. The ignition used is the Bosch dual magneto, firing two spark plugs in each cylinder.

All other points in the design have been worked



Intake side of new 6-cylinder, 7½" x 8½" Harbeck motor

out with the same care, with the view of attaining an engine which will give perfect confidence when at sea. Owing to the moderate weight they should prove especially valuable to a man who wants high power in a cruiser designed for speed. The company's tests have been conducted on the Great Lakes, where high-speed runs can be made over long distances.

The Harbeck Motor Company is an organization of men of means who have been devotees of gasolene motors and motor boating for years. Mr. J. R. Harbeck himself is the holder of many important patents in this line, and Mr. E. A. Ewing, who acts as general manager for the company, received his engineering training while serving as an officer in the United States Navy. A desire to produce a motor-de-luxe of high power led them to form a company for its development. Detroit, where they started, afforded a rich field from which to select able assistants, and when other interests called the principal members to Chicago they took all hands with them and opened a factory in that city. This factory has increased until it now contains a remarkably complete line of machinery especially adapted for the work in hand. From an organization of men of this type, and from a factory equipped without the restrictions of rigid economy, one may expect to find a product that will prove especially interesting to the users of gasolene engines.

Trebert Heavy-Duty and High-Speed Engines

The H. L. F. Trebert Engine Works, of Rochester, N. Y., call attention to their 1913 line of marine engines, which embraces a medium and heavy-duty type and light-weight high-speed racing engines.

The medium and heavy-duty engines are built in four cylinders, in the follwing sizes: 25-40 horsepower, 40-60 horsepower, 60-90 horsepower, and in six cylinders, 35-60 horsepower and 70-90 horsepower. These engines are durable and light when the strength and ample bearing surface are considered. They are built to wear by a firm that has had fifteen years' experience in gas-engine manufacture. They are equipped with the latest refinements and improvements. Clean, noiseless and durable, with no moving parts outside, and a self-contained oiling system, they make a neat, accessible, powerful and handsome engine.

The light-weight racing engine is a V-type, eight-cylinder engine, developing from 80-100 horsepower. This engine is equipped with piston valves, much like a steam valve, though modified for use in an internal-combustion engine. The intake charge is drawn under the valve when it is at its highest position. It then drops, following the cam, cutting off the port and remaining stationary during compression and firing. It then drops to its lowest point, and allows the exhaust to shoot over the top, instead of around it as with a poppet valve. Compression is held by rings, as in a piston; lubrication is supplied by oil in the gasolene. The advantages of this valve in high-speed work are obvious, since it gives free access and egress of gases and does away with valve grinding. Compression becomes better as the rings polish in running. The company states that during the summer exhaustive experiments were conducted on Lake Ontario, where one of these motors was put through severe tests under actual racing conditions in a hydroplane that made better than 40 miles an hour.

The company is prepared to build a sixteen-cylinder, 160-200 horspower to order.

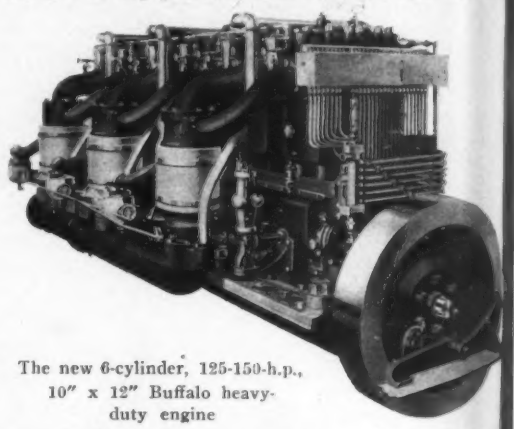
An entirely new type engine is to be included in the 1913 line—a water-cooled rotory motor, called the "Trebert Justrite."

Bridgeport Oil Transformers

The Bridgeport Motor Company, of Bridgeport, Conn., makers of "The Motor that Motes," realizing the trend toward kerosene-burning motors, due to the high price of gasolene, have perfected and placed on the market an oil transformer which they call the Bridgeport, and with which their engines will be fitted when desired, so that they will operate on kerosene.

The transformer is extremely simple and only one carburetor is required. The motor is started on gasolene, and is then switched over to the heavier fuel without change of adjustment. This transformer gives flexible speed control, a feature which will be appreciated, and which makes the device doubly valuable. Their Catalogue L gives full information of this attachment.

Bridgeport motors are made in fifteen different sizes to fit any pleasure boat or work boat model.



The new 6-cylinder, 125-150-h.p., 10" x 12" Buffalo heavy-duty engine

Buffalo Engines for All Classes of Service

The big feature of the exhibit of the Buffalo Gasolene Motor Company, of 1271-1283 Niagara street, Buffalo, N. Y., at the Boston Show will be the new 125-150-horsepower, heavy-duty, six-cylinder engine with 10 inches bore and 12 inches stroke, weighing 7,300 pounds with reverse gear, and having a normal speed of 300 revolutions per minute. This model is the largest and one of the latest of the Buffalo "herd," and already it has found a great demand among work boats of all kinds. An important feature on this machine is the air-starting device shown in the cut herewith. The same model is built in a four-cylinder engine rated at from 85-100 horsepower, but because of lack of space only the six-cylinder model is shown.

Another interesting engine is the 20-24-horsepower, heavy-duty model with 5 inches bore and 6½ inches stroke, normal speed of 350 revolutions per minute. This is another new model, listed for the first time this season. It is designed to fill the demand for a reliable four-cylinder power plant for work boats and cruisers of the smaller kind. In general build it is similar to the 24-horsepower Buffalo heavy-duty engine, which has proved one of the most successful Buffalo models.

Then there is a 10-12-horsepower heavy-duty model with 5 inches bore and 6½ inches stroke. This is a two-cylinder machine, weighing 1,000 pounds with reverse gear complete, and having a normal speed of 350 revolutions per minute.

The 3-4-horsepower, regular type, has 3 inches bore and 5 inches stroke, with two cylinders; weighs 240 pounds with reverse gear complete. The normal speed is 700 revolutions per minute. There is also a 10-12-horsepower, regular type, with 3½ inches bore and 5 inches stroke; weight with reverse gear 330 pounds, normal speed 600 revolutions per minute.

In the lighter weight speed types there is a 25-30-horsepower auto marine, 4¾ inches bore by 5 inches stroke; weight with reverse gear 600 pounds, normal speed 800 revolutions per min-

SPLITDORF

"Always There"

Splitdorf Ignition devices established their superlative quality for all time with the showing of the **Splitdorf Equipped** Peter Pan IV. In speed boat or "kicker" the one dependable form of ignition is **Splitdorf.**

Splitdorf Plugs are not experimental—they are **Standard.** Known since their first appearance as the "common-sense plug," they are exactly that—no more and no less. **Splitdorf Plugs** will outlast your motor. There is nothing fanciful about them—they are made to endure any and every strain of ignition put upon them.

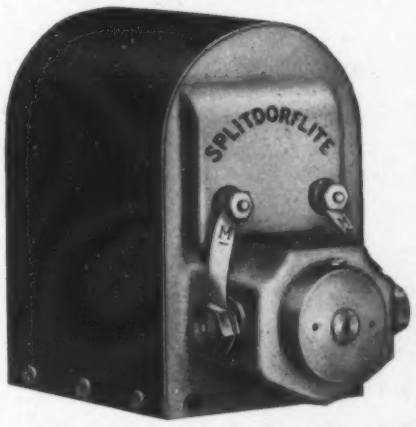
Gas-tight, soot-proof and unbreakable, **Splitdorf Plugs** do not short-circuit or carbonize. For high-pressure engine and terrific motor speed to a throttled down and barely revolving motor—**Splitdorf Plugs** are always reliable.

As with **Plugs,** so with the **Splitdorf** waterproof **"Gem"** type **Marine Coil** of single, two, three and four cylinder construction. **"Gem" Coils** are built in covered oak boxes protecting all parts—are of the highest grade with interchangeable units and are economical on batteries.

The **Splitdorflite** is a simple, compact electric lighting generator giving a steady and uniform output of current, not affected by the variable speed of the engine. There is an absence of complicated governing devices with the few units in the system, and, with an ease of installation, there is a maximum of efficient service with the minimum of attention.

A positive source of illumination, spotlessly clean, unaffected by weather conditions, the **Splitdorflite** once properly installed ends an owner's lighting troubles for all time. An ideal generator for the motor boat.

Splitdorf Ignition devices including **Magnetos, Plugs, Coils,** as a matter of fact, should be specified with every form of hydro-carbon motor. We will gladly shoulder all responsibility for any change over to our superior system and guarantee the greatest satisfaction.



If interested in any form of ignition for gasoline motors, just write in for our free literature. Our new catalog, our "Racing Record" or our "New Lights For Old" is yours for the asking. Do it TODAY.

Splitdorf Electrical Company

98 Warren Street, Newark, N. J.

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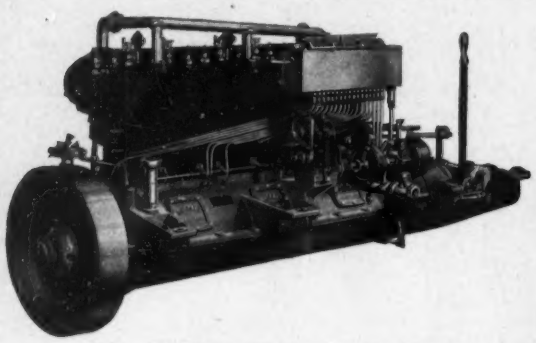
KANSAS CITY	1823 Grand Avenue
SEATTLE	1628 Broadway
LOS ANGELES	1228 South Olive Street
SAN FRANCISCO	430 Van Ness Avenue

LONDON BUENOS AIRES

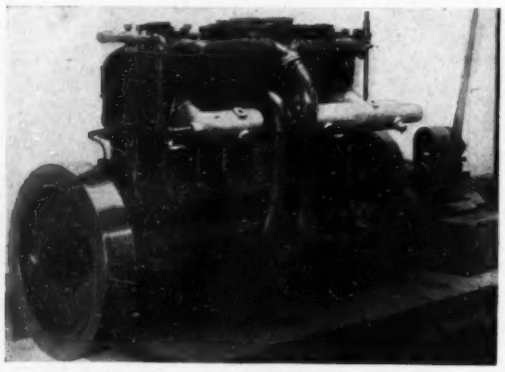


40-h.p. Buffalo automarine for speed work

ute. This is a high-speed four-cylinder engine, intended for fast runabouts and the smaller type of racing boats. It has aluminum base, and is in every way a very quiet and efficient engine.

A larger auto marine is the 40-50-horsepower, with 4¼ inches bore and 5 inches stroke; weight with reverse gear 930 pounds, normal speed 800 revolutions per minute. This model is similar to the 25-30-horsepower auto marine, except that it has six cylinders instead of four.

The 26-30-horsepower heavy-duty engine is a four-cylinder motor, with 6 inches bore and 7½ inches stroke; weight with reverse gear 2,200 pounds, normal speed 350 revolutions per minute. This model has met with marked success, and is a power plant for cruisers. It has also a wide market among work-boat owners.



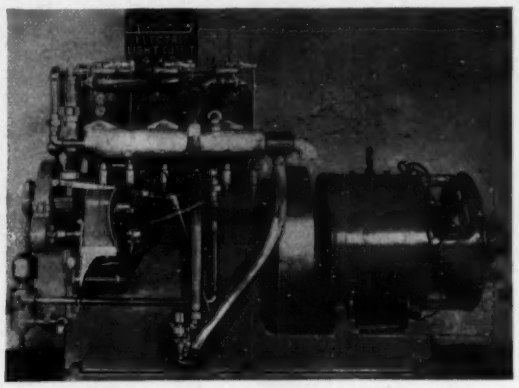
Four-cylinder, 4½" x 5", 18-22-h.p. Speedway engine

A Fine Line of Speedway Motors

The Gas Engine & Power Company & Charles L. Seabury & Company, Con., of Morris Heights, New York City, have always had an exhibit at the motor boat shows that has attracted a great deal of attention by reason of the number and quality of the boats and engines which are shown. At the 1913 shows a line of Speedway engines will be exhibited, both in boats and on the floor. One of the most interesting of the Speedway motors will be the big six-cylinder, 8-inch by 8-inch, 200-horsepower motor, designed for speed work. These are suitable for high-speed day boats and hydroplanes, and at the show they will be seen in both a 30-foot hydroplane and a 54-foot high-speed day boat, the latter arranged with complete engine control on the bulkhead aft of motor.

Among the other engines that will be shown in boats are the four-cylinder, 4½-inch by 5-inch, 18-22-horsepower, and a 4-inch by 4½-inch, four-cylinder, 12-16-horsepower engine, designed especially for yacht tenders, etc. On the floor will be seen a six-cylinder, 8½-inch by 10-inch Reversible Speedway engine of 125-165 horsepower, and a six-cylinder, 6-inch by 6-inch Speedway engine of 50-60 horsepower. One of the highest-powered engines at the Show will be the 265-horsepower, 11-inch by 12-inch Speedway reversible gasolene motor, made in six cylinders.

As most cruising motor boats are now electric lighted, the 7-kilowatt, three-cylinder, 4½-inch by 5-inch electric lighting outfit which is exhibited at the Show will prove of particular interest.



New Speedway, 7-kilowatt., 3-cylinder, 4½" x 5" electric lighting outfit

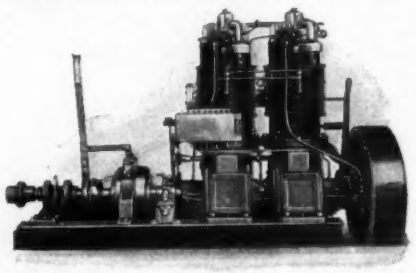
A description of the Gas Engine & Power Company & Charles L. Seabury & Company, Con., 35-foot runabout which is exhibited at the Boston Show will be found on page 109 of this issue.

Frisbie Motors

The Frisbie Motor Company, of Middletown, Conn., have their 1913 stock of Frisbie motors on the market. This is a four-cycle motor, and is designed for semi-heavy duty, medium duty and high-speed work. The Frisbie Company lays stress on the fact that in design these motors are the foremost example of valve in the head type, all valves being located on top of the cylinder directly over the piston, where maximum power and economy result. These engines are designed for use in launches, working boats, speed boats and cruisers, and the company have kept weight within reasonable limits, as they do not believe that it is necessary to carry around many pounds of useless iron to obtain strength.

In designing these engines the company has adhered to the unit system, the cylinders being of three different sizes. Multiple-cylinder engines are made up of an aggregation of these units. This gives a much desired interchangeability of parts.

The motors come in the following sizes: 3-5 and 4-7-horsepower, single-cylinder; 6-10 and 10-14-horsepower, two cylinders; 12-16, 16-25 and 30-40-horsepower, four cylinders; 35-40-horsepower and 50-75-horsepower, six cylinders. The weight ranges between 260 pounds in the smaller size to 1,400 pounds for large size. Many well-known speed, cruising and working boats have been fitted with these engines.



Remington 24-h.p., 2-cycle oil engine

Remington Oil Engines for Work Boats and Pleasure Craft

While the economy of oil engines for commercial purposes has long been a factor that has been appreciated by the owners of working boats, the present tendency towards the higher price of gasolene has also set many pleasure boat owners to looking into the question of kerosene or low-grade oil engines for their pleasure boats. This has resulted in a demand from this class of boat owner which has made itself felt.

The Remington Oil Engine Company, of 120 Broad street, New York City, have had on the market for several years one of the most successful oil engines made, and they have given such general satisfaction that the demand for them is growing rapidly.

Remington marine oil engines are vertical, two-cycle oil engines, which operate by the injection of the oil directly into the combustion chamber after the piston, on its up stroke, has compressed the air in the cylinder to a high pressure and temperature. This pressure and temperature is sufficient to gasify the oil which is atomized into it, and combustion takes place, due to contact of the gas with the ignition pin. The ignition is automatic, no electricity being used. There is no carburetor, oil being driven into the head by the fuel pump.

The speed of the engine is controlled by a centrifugal governor located in the fly-wheel, which gives a longer or shorter stroke to the fuel pumps. A speed controller, acting in conjunction with the governor, allows the speed of the engine to be set at any point at will.

These engines are built to operate on kerosene and fuel oil, the larger sizes having the Clark-Commercial type of combustion chamber, in which petroleum fuel oil, gas oil and heavy oils can be used. The fuel consumption shown on a recent test of Mexican gas oil was 0.85 pint per brake-horsepower per hour at full load, 1 pint at half load, and 1¼ pints at one-quarter load.

The main advantages are: promptness and certainty of starting, safety, the doing away with electricity and the economy. While low operating cost has not been generally a very essential point in pleasure boats, it is a big factor in work boats, where these engines are used mostly. A 35-horsepower Remington oil engine consumes 35 gallons of kerosene every ten hours, costing, at 9 cents per gallon, $3.15. If low-grade oil is available at 5 cents per gallon, the cost in ten hours is only $1.75. With power at this cost the saving in a year represents a real earning on the part of the engine.

One of the Russian Frontier Guards patrol cruisers fitted with two 22-h.p. Remington oil engines

The fact that these same engines, built in stationary types, are used for pumping, electric lighting and general manufacturing, speaks for their reliability. The engines are built in from 7 to 75 horsepower, in from 1 to 4 cylinders.

These engines are now used all over the world. The cut herewith shows one of several cruisers of the Frontier Guards Department, St. Petersburg, which are equipped with Remington oil engines. Her dimensions are 46 feet by 10 feet by 3½ feet. With two 22-horsepower engines she averaged 17 kilometers (12.58) miles during 28 hours' continuous running, using low-grade oil. Catalogues and further information may be had from the Remington Oil Engine Company, 120 Broadway, New York.

Evinrude Detachable Rowboat Motors

During the last few years detachable rowboat motors have come into deserved popularity for use in all classes of boats where it is not desired to install a permanent motor. The Evinrude Motor Company, of 434 Walker street, Milwaukee, Wis., will exhibit their line of detachable rowboat motors at both the Boston and New York Shows. These motors, as their name implies, are designed to clamp on the stern of a rowboat or on the side of a canoe, and have adjustable propeller shaft so that they will fit practically any

THE Matchless "Eagle" AT A Matchless Price

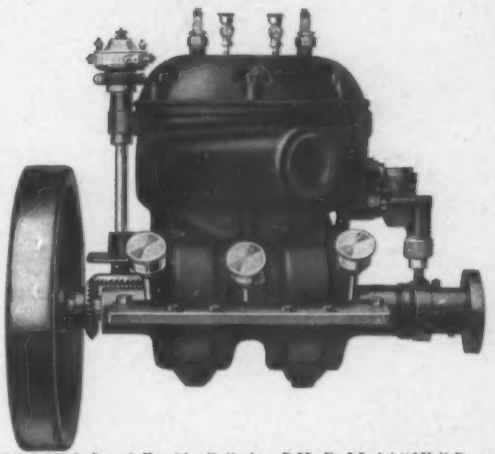
1913 an "Eagle" Year

WE have taken ample time to develop and train this classy line of "Eagles" so the 1913 flight will be not only swift but one of endurance as well. Now is the time to prepare for the 1913 harvest, and a harvest there is going to be to the dealer who is wise enough to talk "Eagles" to his customers.

Mr. Dealer and Mr. Boatbuilder, *there is money in selling Marine Engines*, but most of you have tried to sell engines that were not sufficiently well known. How can you ever expect to make money in the Marine Engine business unless you associate yourself with a big live organization? How can you expect to make money on Marine Engines when you confine yourself to a line with few sizes and perhaps only one style? How can you ever expect to make money selling Marine Engines unless the Manufacturer from whom you are obliged to purchase has ample resources to carry a complete stock ready to ship promptly upon receipt of order? More harm has resulted to the Dealer and Builder owing to delayed shipments than from any other single cause.

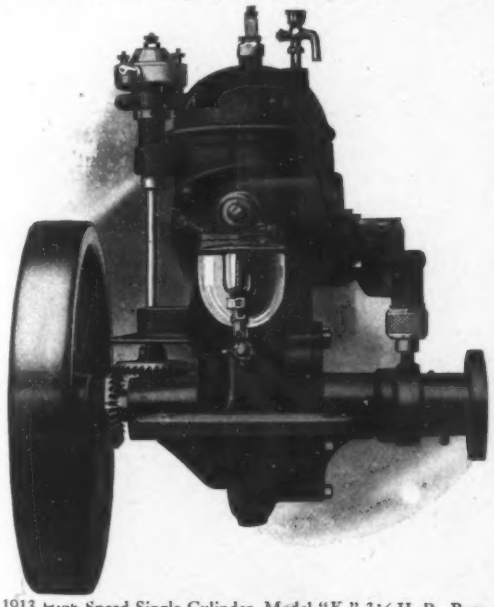
It's an easy task to sell two engines where only one was sold before, providing you select the right engine.

"Eagle" engines should be your selection for 1913. Viewed strictly from a business standpoint, you cannot find among the manufacturers of Marine Engines a line of engines so complete as our 1913 Line of "Eagles". Just stop and consider that we offer nineteen (19) different models covering the entire field of two-cycle construction. You can find in this line an engine for any type of boat and for every requirement where a two-cycle engine can be used.



1913 High Speed Double Cylinder, 7-H. P. Model "2K," Bore 3½–Stroke 3¼–Weight 136 lbs.

Completely Equipped with Excelsior float-feed marine carburetor, with option of Schebler carburetor, "Black Eagle" spark plugs, roller contact timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws and instruction book. **Price, $95.00**



1913 High Speed Single Cylinder, Model "K," 3½ H. P., Bore 3½–Stroke 3¼–Weight 90 lbs.

Completely Equipped with Excelsior float-feed marine carburetor, with option of Schebler carburetor, "Black Eagle" spark plug, roller contact timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches screw driver, can of cylinder oil, can of grease, two oil cans, lag screws, and instruction book. **Price, $50.00**

It might be well for you to view the "Eagle" product from a permanent selling standpoint. There is no field of manufacture that we know of which has attracted so many unreliable and insufficiently financed companies as the engine business. They have come and gone and today we look at this business as a survival of the fittest. "Eagle" Engines have been manufactured and sold for thirteen years through the same general management. No user of an "Eagle" Engine has ever been obliged to discard his engine due to his not being able to secure necessary parts. We are prepared to care for all styles of "Eagle" Engines manufactured and sold during the past thirteen years.

You will find in our 1913 line an entire new and up-to-date line of high-speed engines at attractive prices. Our standard line of medium and heavy-duty models cover the entire field of use where marine engines are desired for working and fishing boats. You are not obliged to pay any more money for an "Eagle" Engine during 1913 than you are for less efficient ones.

Start this year right, build your business for the future. There is no profit for you if you are obliged to change your source of supply on engines each year. Our most desirable and prosperous dealers are those who have sold "Eagle" Engines for periods of six to twelve years. They have made money in following this policy and we see no reason why any live and enthusiastic dealer or builder cannot do the same.

Remember, you are not asked to pay a premium for "Eagle" quality for 1913. You will find our prices as low and the equipment better than on any line of standard made engines. Write for our 1913 Catalog.

The Standard Company, Torrington, Conn. U. S. A.

depth of stern. It is a horizontal, one-cylinder, 1½-horsepower water-cooled motor, made of the very best material and has extraordinary strength and power. The gasolene tank is attached to the mechanism between the fly-wheel, which is at the upper end of the shaft, and cylinder. The propeller shaft works in an adjustable sleeve.

Ignition is of the jump-spark type, being supplied by three dry batteries and a coil in a battery box carried in the boat. The motors weigh 50 pounds, and may be attached or detached to or from any boat in 30 seconds. For any rowboat up to 16 or 18 feet long they make ideal power, and are particularly applicable for power tenders of both power and sailing yachts.

1913 Models of Holmes Marine Motors

The Holmes Motor Company have their 1913 models on the market and a line of them will be seen at the Boston Show. These new models have all been thoroughly tested and tried out, and are offered by the Holmes Motor Company, of West Mystic, Conn., with full knowledge of their capabilities.

The Holmes motor was designed with the main idea of producing an accessible engine—one in which every part could be reached and taken out practically without disturbing any other part. In any engine, especially in engines used for commercial purposes, the value of this feature is easily seen. In the new models even the crankshaft can be taken out through the side of the base, as the standards are divided, and the pistons can be easily removed through the bottom of the cylinders. The Holmes is a long-stroke, open-base, four-cycle motor, the Holmes Motor Company believing in the long-stroke feature by reason of its flexibility and economy of fuel consumption. Another feature to which the Holmes Company calls attention in their engine is the reserve power at extremely low speeds.

Among the 1913 line of Holmes motors is a four-cylinder, 20-25-horsepower, 4½-inch by 6¼-inch engine, and a 40-45-horsepower, four-cylinder, 6 inches diameter by 9 inches stroke. The ignition equipment of this latter engine consists of Bosch magneto and battery system for starting. In the six-cylinder sizes there is a 35-40-horsepower, 4½-inch by 6¼-inch, with Bosch high-tension dual magneto and battery, and the 60-70-horsepower, 6 inches by 9 inches, with an independent Bosch magneto and battery system for starting.

The lubrication in all these engines is force feed automatic to all main bearings, pistons, crankboxes and thrust bearings.

The Holmes Motor Company also has a thoroughly equipped plant for storing boats during the winter or for doing any necessary repair work or building. They have a marine railway capable of handling boats up to 150 feet in length.

Hartford Engines

The Gray & Prior Machine Company, of 656 Suffield street, Hartford, Conn., have their 1913 line of Hartford engines on the market. These engines are reliable, sturdy, heavy and medium-duty motors, and have made an excellent name for themselves wherever they have been used.

The engines have split adjustable bearings, made in halves; have closed base and use a gravity oiling system. The Ball reverse gear made by the New York Gear Works is used with the Hartford engines.

Special attention is given to testing Hartford motors before they are placed on the market, and every one of them turned out must come up to the most rigid requirements and stand the minutest examination. The horsepower of these engines is guaranteed by the Gray & Prior Machine Company.

The features which the Gray & Prior Company emphasize in regard to their engines are long life, interchangeable parts, freedom from stoppages and breakdowns and few parts. Strength and durability are not sacrificed for lightness. Repair parts can always be had promptly, and can be relied upon to fit.

These engines are made in from 3 to 20 horsepower, single and double-cylinder types.

One of the boats that has helped to bring Hartford engines into prominence on the Maine coast is the Hartford III, owned by Mr. A. M. Smith, of Portland, Me. This is a 28-foot displacement boat, with a beam of 4 feet, and is equipped with a 20-horsepower Model X Hartford motor. While the boat is a speedy model, she is by no means a racing machine, being a fairly heavy, high-sided and seaworthy craft, yet her moderate power plant drives her a good 18 miles an hour.

Hartford III, equipped with 20-h.p. Gray & Prior engine, which gives a speed of 18 miles

Fairbanks-Morse Marine Engines

The Fairbanks-Morse Company, of 900 South Wabash avenue, Chicago, Ill., will exhibit at the Boston Show a line of their 1913 engines which includes the new type K motor in one and two-cylinder models, developing 7½ and 15 horsepower, respectively, at 500 revolutions per minute. These are two-cycle, heavy-duty engines, designed for cruisers, fishing and working boats. The Fairbanks-Morse motors are designed especially to stand up under hard and continued service. The bearings are all extra large, and are both removable and renewable.

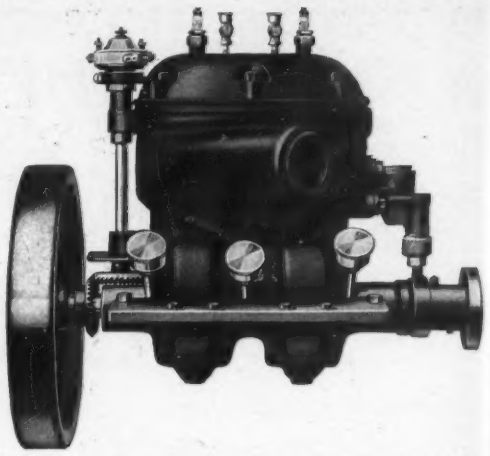
Another point that the Fairbanks-Morse Company has borne in mind in designing these engines is accessibility, and every part is easily reached without the use of special tools.

The line of Fairbanks-Morse motors includes a high-speed type in from 3½ to 20-horsepower, a slow-speed engine in 7½ to 15 horsepower. These engines have either make-and-break or self-contained jump-spark ignition systems. The lubrication is by gravity feed with centrifugal oil ring to the crank or, if desired, through the fuel.

The new Fairbanks-Morse catalogue No. D. R. 1316 may be had by writing the Fairbanks-Morse Company, 900 South Wabash avenue, Chicago, Ill.

1913 Eagle Engines

One of the largest and most complete lines of marine engines at the Boston Show will be that of the Standard Company, makers of the well-known Eagle engine. The Eagle line, with the exception of four new models for 1913, remains the same as last season. The four exceptions are the new high-speed models K, 2 K and O, and a combined heavy and medium-duty model R engine. These new models are of the most modern type, and are the last word in two-cycle marine engine design. They



High-speed new Model 2K, 7-h.p. Eagle engine

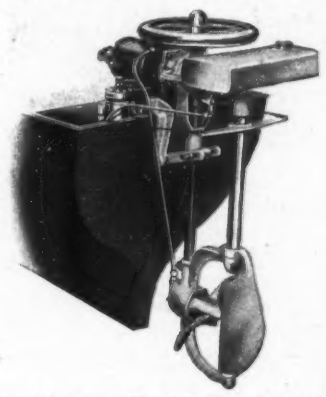
combine extreme simplicity and the highest grade of construction, all detachable parts that are not absolutely necessary being eliminated. The full line of Eagle engines for 1913 is as follows:

Model.	H.P.	R. P. M.	Bore and Stroke.
		HIGH SPEED	
K	3½	800-1,000	3⅝ x 3¼
2K	7	800-1,000	3⅝ x 3¼
O	6	700-900	4½ x 4
		MEDIUM SPEED	
A	1½	650	3 x 3
B	3½	650	3¾ x 4
2B	7	650	3¾ x 4
3B	11	650	3¾ x 4
4B	15	650	3¾ x 4
2C	12	600	4½ x 5
3C	18	600	4½ x 5
4C	25	600	4½ x 5
		HEAVY-DUTY AND MEDIUM SPEED	
R	4-6	400-600	4½ x 5
		HEAVY DUTY	
F	2½	575	3¾ x 4
D	5½	450	5 x 6
2D	12	450	5 x 6
E	7	400	6 x 6½
2E	15	400	6 x 6½

The Standard Company have made extensive tests with these engines, and report that they are more than pleased with the results that have been secured.

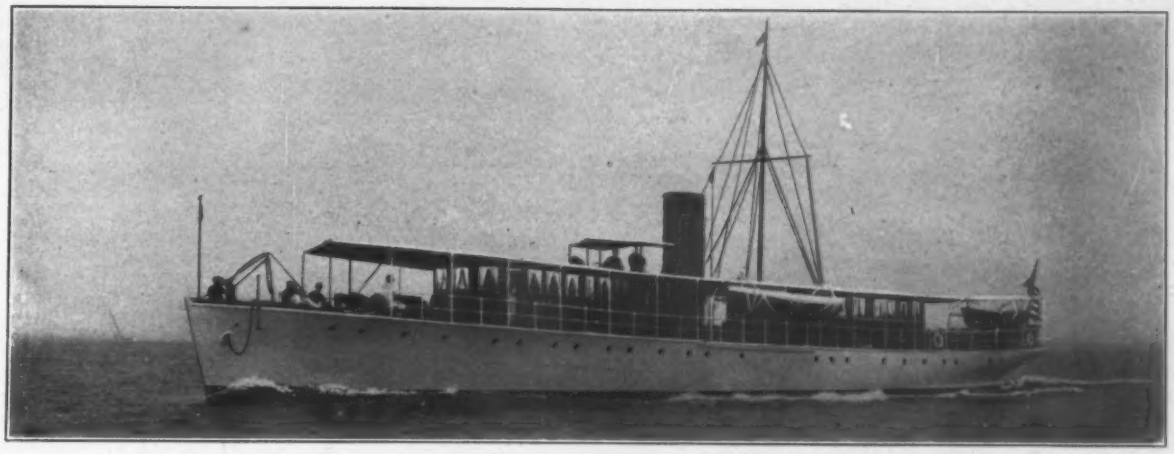
Waterman Marine Engines and an Outboard Motor

One of the first detachable outboard motors which was placed on the market was the Porto motor of the Waterman Marine Motor Company, of Detroit, Mich. In 1912 a new model of this motor was brought out by the Waterman Company, the first change that was necessary in design since 1906. This motor is of 2-horsepower and clamps on the stern or side of rowboat, skiff or canoe, where it makes an efficient power plant. It is adjustable to any size or type of stern, and will give efficient service in all types of small boats from a heavy dory to a small yacht tender. It is also designed so that the propeller and shaft



New Waterman Porto outboard motor

Yachts and Launches
Steam Boilers and Engines
Speedway Gasolene Engines



Com. Morton F. Plant's Twin-Screw Steel Gasolene Cruiser "Thelma," 138 feet.

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Gas Engine & Power Co.,
and Charles L. Seabury & Co.,
(CONSOLIDATED)
Morris Heights, New York City

See Our Exhibit, National Motor Boat Show, New York City, Feb'y 15-22, 1913

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Wm. Newstead, engineer on the famous "Detroit" says—

"I never had to touch the oiler during the entire trip. Each feed was adjusted before leaving Detroit, and in spite of the rough weather and different engine speeds the oiler automatically took care of all the changing conditions.

"I examined the splash level in the crank case a number of times and always found it at just the right height, showing that the oiler always fed exactly as much oil as the engine used up. Every part of the engine was perfectly lubricated at all times, and we had no trouble of any kind. The oil consumption was very low."

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The Detroit Oiler starts and stops with the engine and automatically changes its rate of feed because it is driven from some moving part of the engine.

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may be disconnected and the engine used for stationary work ashore, where it will run any machine that requires under 2 horsepower.

The Waterman Marine Motor Company also makes marine motors up to 30 horsepower, in from one to four cylinders. The Waterman B4 is a new model lightweight, high-speed engine, having an aluminum crankcase, spun copper water-jacket, and delivers 24 horsepower on a weight of 250 pounds.

Bruns, Kimball & Co.'s Marine Motors

The splendid exhibits of the Eagle and Sterling engines at the New York Motor Boat Show, February 15 to 22, will be in charge of Bruns, Kimball & Co., of 132 Liberty street, New York. The two booths they have secured will be opposite each other at the north side of the building at the left, and about half-way down as you enter from Madison avenue. Mr. Bruns, Mr. Kimball or Mr. Parr will at all times be in attendance, and be prepared to give any information and to quote allowances on used engines.

During the show this firm will quote exceptionally attractive allowances on any make and size of used engine to be accepted in part payment towards one of their new machines. In making an exchange of this kind it is not necessary to pay a heavy cash deposit. A small deposit will bind the bargain, the used engine itself acting as a deposit towards payment of the new.

An exhibit of 150 or more second-hand engines of all sizes and types; a large stock of the leading four-cycle and two-cycle engines in the new engine department, and (in addition to the marine type) a line of stationary engines and a number of slightly used automobile engines, make 132 Liberty street a very attractive place for the gasolene engine buyer. The yacht brokerage department, in which are listed over 2,500 yachts and launches of every description, will appeal to the yachtsman or motor boat enthusiast seeking a good boat at a reasonable price.

Consolidated Two-Cycle Engines

The Consolidated Engine Company, of Detroit, Mich., have recently placed on the market a line of gasolene engines that will appeal to the man that wants an engine of under 15 horsepower at a moderate price, either for converting his rowboat or canoe into a motor craft or for power in any new boat up to 30 feet or so in length. These motors are made in 2-horsepower, single-cylinder, and 5 and 12-15-horsepower, two-cylinder.

Realizing that efficiency is the first consideration in a marine motor the Consolidated Engine Company have embodied in the construction of their engines high-grade workmanship and the highest standard of fittings obtainable. The engines are simple in design, and the company guarantees them to give efficient and reliable service under all conditions.

In order to demonstrate their confidence in these motors, and to prove their statements concerning them, the company is offering a 30 days' free trial of these motors. They say that they can make immediate delivery on any of the sizes listed. Further information regarding this liberal offer and catalogues and price list may be had by writing the Consolidated Engine Company.

Hatch Oil Engines for All Boats

The owners of pleasure power boats are rapidly learning what the owners of commercial craft and work boats have long ago found out, that in the kerosene or oil-burning internal-combustion engine lay the hope of economical operation. In fact, the soaring price of gasolene has brought this fact home to him with a rude jolt, and set him to studying catalogues of the kerosene engines that are on the market. Not only in economy will the kerosene oil engines appeal to him, but the fact that kerosene is a fuel that can be purchased anywhere.

The Hatch Oil Engine Company, of 441 Eighteenth street, Brooklyn, N. Y., have in the Hatch oil engine a kerosene and oil-burning engine that has proved the correctness of its design by giving satisfactory service for a number of years. This is not a gasolene engine with a kerosene vaporizing attachment, but is designed and built primarily to use kerosene and lower grade oils. This point is worth noting, as it is necessary that just the right temperature be obtained in the engine to properly vaporize kerosene, and this temperature cannot be obtained unless the ports are properly placed and of the proper size, and the head properly designed with correct and positive ignition.

The Hatch oil engine is of the valveless type, commonly known as two-cycle, and receives an impulse at each down stroke of the piston. The principle and operation of the engine are both simple and easily understood. In operation the air necessary for mixture with the oil for a charge is taken into the cylinder under the piston, as it is at the extreme end of its up-stroke, when a partial vacuum is created in the enclosed crank-case, causing the air to rush in. This air inlet port is directly under the exhaust port. The piston on its downward stroke closes this air port, and compresses the air in the crank-case to about 4 or 5 pounds pressure.

Meanwhile the mixture of air and vaporized oil already in the cylinder is burning and expanding. When the piston is nearing the end of its stroke it uncovers the exhaust port, causing the exploded gases to escape until its pressure reaches that of the atmosphere. Then the compressed air in the crank-case passes through the transfer air box and mixes with a few drops of water, and is diverted upward against the heated surface of the ignition chamber by the deflector plate on top of piston, expelling the remainder of burnt gases from previous explosion. The ignition plug is an important part of a kerosene engine, and the plug on the Hatch engine is especially designed and consists of a threaded stem, at the lower end of which is a perforated disc. The Hatch marine engines are made in 4 to 150 horsepower.

(For other engines see page 144.)

The Boats at the Boston Show

Rice Launches, Runabouts and Tenders

The Rice Bros. Company, of East Boothbay, Me., will have a fleet of five handsome little power boats at the Boston Show, representing their line of stock launches, runabouts and speed boats. The two sizes which made such a hit last year—the 20-foot Special launch, with single-cylinder, jump-spark motor, which gives her a speed of 8 miles an hour, and sells for $275, and the 20-foot Fast Runabout, equipped with a two-cylinder, 8-10-horsepower Rice motor, which gives a speed of little better than 12 miles an hour, and which sells for $375—will both be seen this year. In addition, there will be a little 17-foot decked launch, with 4 feet 6 inches beam and a draft of 16½ inches, equipped with a 3-horsepower Rice motor, which gives a speed of about 7 miles an hour, and which sells at the very attractive price of $195.

The other boats to be shown are the Rice 20-foot auto launch, with engine installed under a hinged hatch just forward of amidships. This boat is very handsomely finished in mahogany, and is fitted with a Rice 8-10-horsepower motor; is thoroughly high-class in every respect, and sells at a very moderate figure for the class of workmanship and material. A speed of 13 miles an hour is claimed for the boat.

Rice Bros. 20-foot Auto-launch. Speed 13 miles an hour, with 2-cyl., 10-h. p. Rice motor

The other boat is something that will appeal to all small boat owners. This is a Rice 9-foot round-bottom yacht tender or dinghy, with oak frame and cedar planking, which weighs but 90 pounds. It is a well modeled little craft with good carrying capacity, and should tow well, and sells at the popular price of $45. It is finished bright, and seats and trimmings are of mahogany.

A line of Rice single and double-cylinder motors will also be shown. It is only by standardizing their shop, and building in large quantities, that the Rice Bros. Company are able to turn out the class of boats they do at the price.

Elco Motor Boats at the Show

The Electric Launch Company, of Bayonne, New Jersey, builders of the famous Elco motor boats will have a line of their 1913 express type boats at the Boston Show. This will consist of a 28 and 35-foot Elco Express, equipped with the well-known Elco gasolene engines. In design, workmanship and material these boats represent the highest development in the express type of pleasure boat.

The 28-foot Elco Express is equipped with a 40-horsepower, four-cylinder engine, a speed of 20 miles being guaranteed. The length over all is 28 feet, beam 5 feet, draft 24 inches. The motor is located forward under a hood, with controls on bulkhead alongside of steering wheel and seating cockpit aft, accommodating four wicker chairs. It has a comfortable carrying capacity of 8 persons. For protection against weather the cockpit may be covered with an automobile hood, side curtains and a glass wind shield forward. Lockers are provided under the permanent seats, which are upholstered in leather over a hair and cork filling. The planking is of Southern cedar.

The power plant consists of an Elco four-cylinder, 40-50-horsepower gasolene engine. Ample protection is given the motor by a hinged metal hood, by means of which ready access may be had to the engine compartment. The engine is of the four-cycle type and has its cylinders cast in pairs; the dimensions are 5 inches bore by 4¾ inches stroke, and it develops its rated power at a moderate speed.

The 35-foot Elco Express is equipped with 60-horsepower, six-cylinder engine, 24 miles speed being guaranteed. The length over all is 35 feet, beam 5 feet 3 inches, draft 24 inches. Entire hull finished in solid mahogany, giving the richest possible effect.

The speed developed by these boats is most unusual—24 miles—when one considers that with it are combined seaworthy qualities, comfortable seating appointments and large carrying capacity.

A Big Fleet of Racine-Truscott Boats

One of the largest exhibits of boats at the Boston Show will be that of the Racine-Truscott-Shell Lake Boat Company, of Muskegon, Mich. Of the large line of stock boats which this company builds, ranging from a 9-foot yacht dinghy to a 45-foot cruising power yacht, the following boats will be shown:

One 20-foot family runabout, equipped with 8-horsepower double-cylinder Pierce motor; one 18-foot Speedabout, equipped with 6-horsepower high-speed motor; one 16-foot dory, equipped with 3-horsepower high-speed motor; one 17-foot canoe; one 14-foot Livery rowboat; one 15-foot Leader rowboat; one 15-foot Princess rowboat;

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"The Standard Sail Cloth"

has been used on every Cup Defender and on practically all the winning yachts of the country since 1898.

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It will be used on all the leading racing yachts in 1913, because it will retain its set and shape better than any other sail cloth yet produced.

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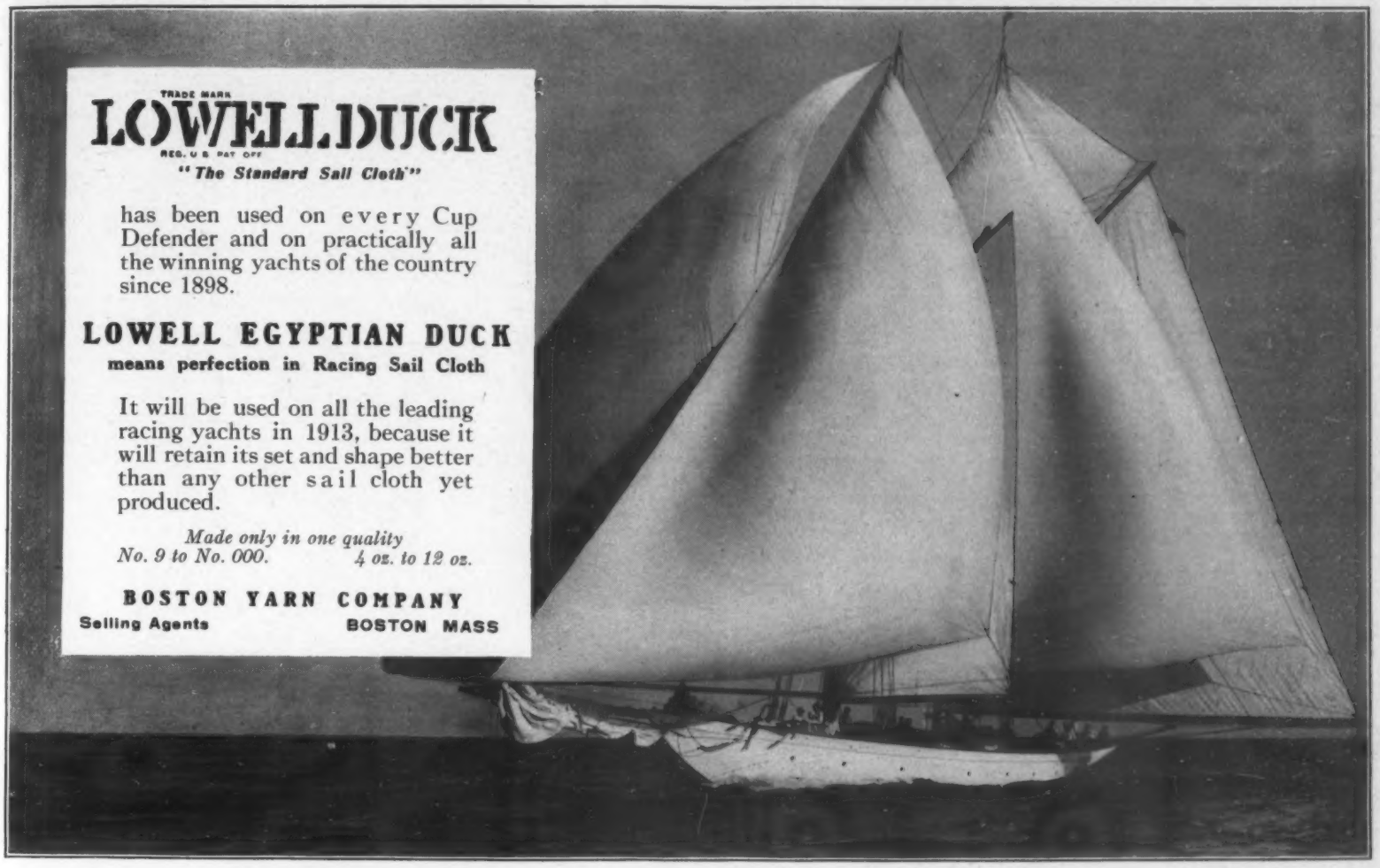

Wilson & Silsby

Sailmakers

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For three generations the name of "WILSON" has been identified with sails on the FASTEST YACHTS IN THE WORLD—from the Championship Winners of all Classes to America's Cup Defenders. No better results can be obtained than from the use of our sails. Among the championship winners of 1912 using Wilson & Silsby sails may be mentioned the following:

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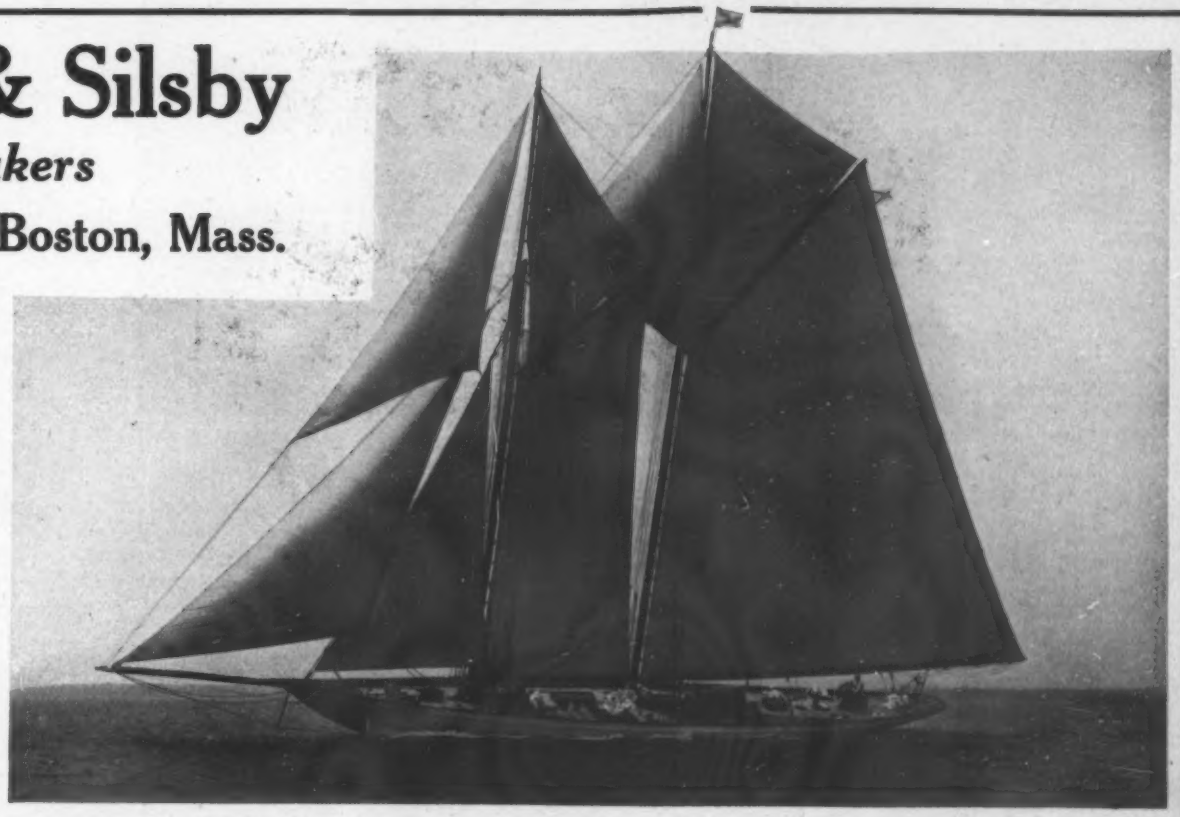
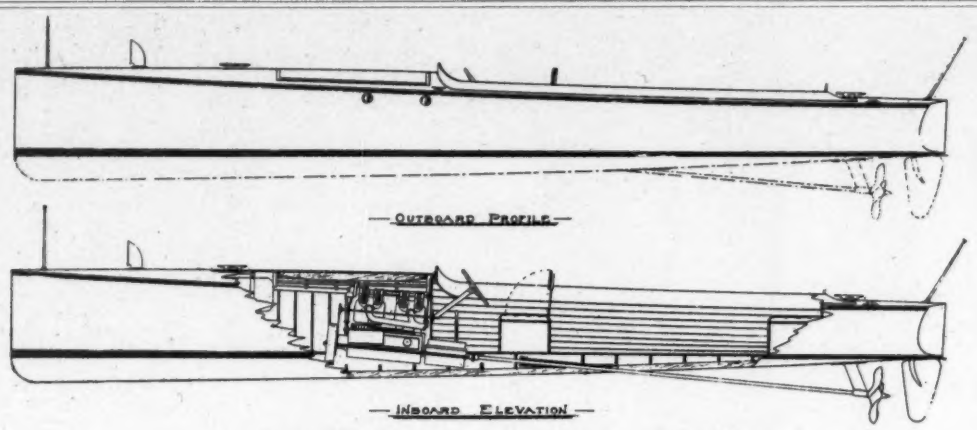
WA WA, " "
MOSLEM II, " "
QUAKERESS, Inter-Club Y.R.A.
CHEVY CHASE, " "
CURLEW II, Great South Bay, L.I.
SALAMANDER, Inland Lakes Y.R.A.
CUBANOLA, " "
KATHRYN II, " "
CHALLENGER, San Francisco
LUCIE Gottenburg, Sweden
JOLANDA, Abo, Finland



We take pleasure in calling attention to the fact that we are having made for us at the present time a full new line of specially constructed yacht duck of the finest combed Egyptian cotton. This duck is made on the very latest machinery and by the best weavers in the United States. We can guarantee to give our customers something in canvas that is absolutely perfect and of the same first-class workmanship that has always characterized our sails.



Truscott 28-foot fast runabout. Speed, 17 to 19 miles

one 10-foot yacht dinghy; one 9-foot canvas-covered yacht dinghy; one 12-foot power tender.

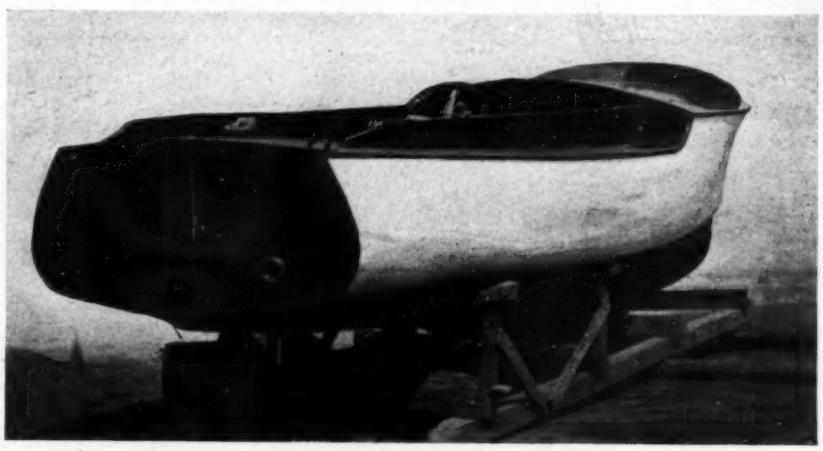
In addition to the boats just mentioned the Racine-Truscott-Shell Lake Boat Company make a long line of stock models.

Davis "Dinks" at the Show

The dinghy or tender is a most important part of every power boat's equipment, and the dinghy problem is one that many a yachtsman has found hard to solve, so when just the right boat comes along the skippers are sure to be interested.

The Davis Boat Works, of Sandusky, Ohio, have long made a specialty of small tenders designed particularly for power boats or small yachts. So satisfactory have these boats proved, and so well suited for the work for which they are designed, that the name "Davis Dinks" has come to be a synonym for the best in the way of small boat tenders. At the Boston Show the Davis Boat Works will have two rowing tenders and one power tender as examples of their line of stock boats. The company carries a line of these boats so that they can furnish them on short notice.

The rowing dinghies come in 8, 10, 12 and 14-foot sizes, weigh from 70 to 150 pounds, while the power tenders come in 10, 12 and 14-foot sizes, equipped with any suitable motor that the purchaser desires. The boats are well built, the workmanship and material being of the highest class, and they are finished in either oak or mahogany trim, as desired.



22-foot V-bottom runabout, with round bilges, made by Bayonne Launch Co. and M. I. Doyle Co.

A Milton Runabout and Yacht Tender

The Milton Boat Works, of Rye, N. Y., are building a runabout for the New York Show that will appeal to the discriminating power boat man. She is 22 feet 6 inches long over all and 5 feet 7 inches beam. Keel, stem and deadwood are of oak, frames are oak, close spaced, and thoroughly fastened. Planking is of Southern white cedar. Deck, coaming, cockpit ceiling and seats are of selected mahogany. The motive power is a three-cycle, 12-horsepower Ferro, equipped with reverse gear and bar starter, which will drive the boat 13 miles per hour. All controls are at the steering wheel, so that she is a one-man boat. Cushioned seats are provided for the helmsman at the after-end of the cockpit. The cockpit is large, and has room for chairs in addition to the fixed seats.

In turning out this boat the builders have produced a thoroughly well-built craft that they sell at a moderate price. They have gotten away from the lightly-built, piano-finished craft seen in previous shows. At the same time she should not be confused with the ordinary stock product of the cheap builder, as every part is carefully selected, well fitted and strongly fastened. The construction and finish are of the usual high standard of Milton boats, and the whole craft shows the hand of the experienced designer. She is an able and handsome craft, and should attract favorable comment from the discerning yachtsman.

A handsome 12-foot lap-streak yacht tender, cedar planked and mahogany trim, is also shown.

Bayonne Launch Company's New V-Bottom Speed Boat

One of the important consolidations in the motor boat field this winter is that of the Bayonne Launch Company and the M. I. Doyle Company, which has recently taken place. Mr. Mason I. Doyle, of the latter company, has gone with the Bayonne Launch Company as secretary and general manager, and will have supervision over both manufacture and sales.

The Bayonne Launch Company will now make the full line of V-bottom boats which were formerly sold by the M. I. Doyle Company, and will also continue to make the Bayonne launches and cruisers which they have been building the last few years. One of the new boats which the company will put out this year is a very attractive V-bottom speed boat with some rather unusual features. This boat is 22 feet 5 inches long, 5 feet 1½ inches wide, and 21 inches draft. Under water she retains all the characteristics and advantages of the V-bottom boat, while her bilges, instead of forming a sharp angle as in the older type, are rounded. This has a number of advantages, among them being that it eliminates a tendency to leak along the bilge and chine piece. It also gives the boat the appearance of a round-bottom boat above the water. This craft will be equipped with a Hazard four-cycle, four-cylinder, 25-horsepower motor, which is expected to give a speed of 19 miles an hour. This will be a notable addition to the new types of speed boats and runabouts to be seen this year.

New Boats with Twentieth Century Motors

The New York Yacht, Launch & Engine Company, of Morris Heights, New York City, reports that the season is an extremely busy one with them, and invite prospective yacht owners who intend to build to visit their plant on the Harlem River and see the boats that are there under construction. The boats at present in hand embrace many interesting types. They range from 40 to 100 feet in length, there being two 40-foot power boats, one 52-footer, three 65-footers, one 83-footer and one 100-foot cruiser. In all of these boats will be installed Twentieth Century Motors, which are built by this concern.

The shops and yard of the company are located at Morris Heights, New York City, and they can be reached from Forty-second street via New York Central trains, or from 155th street elevated station, via New York and Putnam trains.

Swasey, Raymond & Page Designs

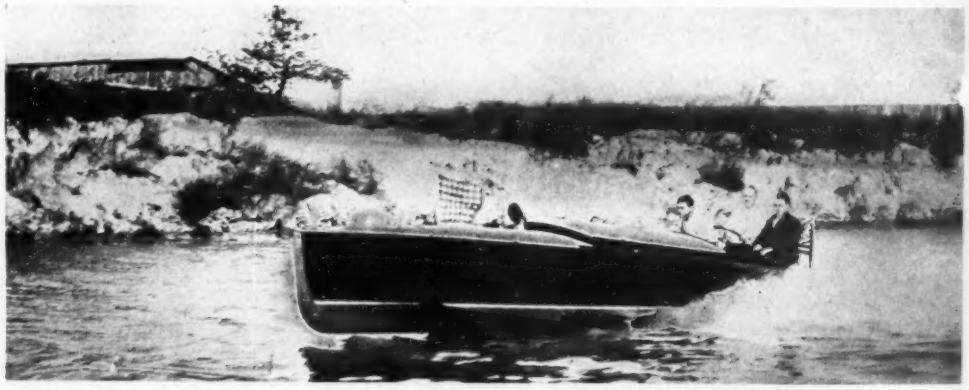
Swasey, Raymond & Page, naval architects and engineers, of 622 Colonial building, Boston, Mass., have a number of unusually attractive stock designs in power boats from 20 to 53 feet in length which should make a special appeal to those who contemplate building. One of their cruising boat designs is called the Gray Goose Special. This is an exceedingly handsome power cruiser, 35 feet over all by 9 feet by 3 feet, which with a 20-horsepower engine makes a speed of 9½ miles an hour. This little boat is not only "classy" in appearance but is extremely able and easily driven. Swasey, Raymond & Page will be glad to furnish further particulars upon request.

The Weckler Hydroplane Bullet

The Weckler Boat Company, of Chicago, Ill., builders of high-grade boats of all descriptions, have made a specialty of hydroplanes in the last two years, and have turned out a number of very fast boats, using the Fauber-type of hydroplane.

One of the latest of these boats is the 26-foot Weckler-Fauber hydroplane Bullet, built by them for Mr. Earl H. Deakin. We reproduce a photograph of this boat here. She is powered with a six-cylinder, 100-horsepower Van Blerc motor of stock model. A speed of 35 miles an hour was guaranteed for her, but on the trial trip it is said she attained a speed of 40.3 miles per hour. The boat has seats for four people.

Among the other boats that will be seen at the Boston Show are: A Lawley 30-foot mahogany runabout, and 13-foot yacht tender; a line of Cape Cod power dories, launches and fishing boats; Kershaw-Williams power dories, and a line of Toppan dories.



Weckler-Fauber 26-foot hydroplane Bullet. Speed, 40.3 miles on trial trip

Concentrate Your Purchases

with a modern, progressive supply-house, centrally located, doing business with a big, clean stock, in an up-to-date plant.

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Send 20 cents in stamps to pay postage on our 500 page Marine Supply Catalog, No. 101. 20 cents refunded on your first order. If you already have the Catalog send for our

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THE UNITED STATES EQUIPS

THE SURF BOATS OF ITS

LIFE SAVING SERVICE

WITH

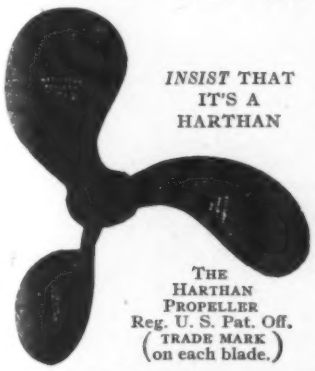
GENUINE HARTHAN PROPELLERS

Where lives are at stake one doesn't take chances, and the selection of these propellers in preference to all others for so important a responsibility where absolutely uniform reliability and dependability are all important, speaks for itself.

All Genuine Harthan Propellers, whether for

SPEED, CRUISING or TOWING,

measure up to the highest possible standards. They are the wheels for those who want the **best.** They are no more expensive than most goods of inferior quality.



INSIST THAT IT'S A HARTHAN

THE HARTHAN PROPELLER Reg. U. S. Pat. Off. (TRADE MARK on each blade.)

Send for Catalogue to

McFARLAND FOUNDRY & MACHINE CO.

TRENTON NEW JERSEY

Make Your Engine Silent

Yes, *really* silent. Effectively silent. No more nerve-racking popping noise. You can ride in comfort if you'll install the

Maxim Silencer for Motor Boats

It works on a boat just as it works on a gun. Absolutely different from any similar device of its kind on the market today. Stops the noise of an above water exhaust. No back pressure whatever. It improves the action of the engine. Increases mileage per gallon of gasoline. With the Maxim Silencer you can comply with every State law regarding exhaust noises.

SPECIFY IT ON YOUR NEW BOAT INSTALL IT ON YOUR OLD BOAT

Maxim Silencer for Motor Boats is made in all sizes and is easily attached. Any boat, engine builder, or hardware dealer can get it for you. Or we'll ship direct to you if you cannot secure it through you local dealer.

WRITE TODAY FOR OUR LITERATURE.

Mention bore, stroke of engine, and size of exhaust outlet when writing.

Wilcox, Crittenden & Company, Inc.

10 South Main Street : Middletown, Conn.

Sole Mfrs. and Distributers for United States and Canada of Maxim Marine Silencer

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

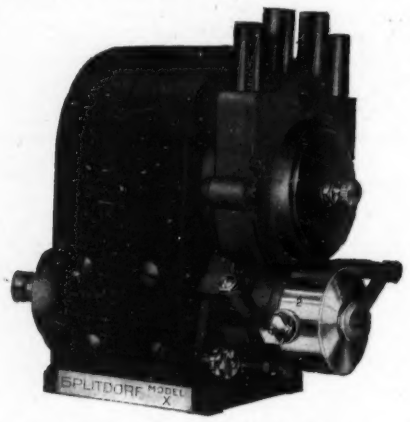
Marine Equipment and Accessories for all Kinds of Craft

New Splitdorf Lighting Outfits, Magnetos and Coils

The Splitdorf Electrical Company, mindful of the present demand for electric lighting on yachts and motor boats, is in the field with an equipment which should make a strong appeal to motor boat owners. With as few parts as practical, a highly efficient generator, a fuse box and an ammeter make an attractive outfit. All controlling devices, that is, the parts regulating the output of the generator as well as the flow of current, are incorporated in the machine, which is dust, oil and water proof.

With the Splitdorf system the battery is floated upon the line, and the generator contains regulating features that compensate for the different rates of speed and control the output. This is performed automatically, and as every instrument is carefully assembled and tested at the factory, it will not require any attention whatever from the user.

A feature of the Splitdorf generator is the method of compensating for the variable speeds of the engine. Unlike some types, the machine is not fitted with friction clutches, governors, etc., but relies upon its interior construction. The control is accomplished by the differential windings, and a special construction in the arch of the generator that will positively and effectually control its output above a predetermined speed and hold the voltage and amperage at a uniform quantity and pressure suitable for maintaining the battery in a properly charged condition, as



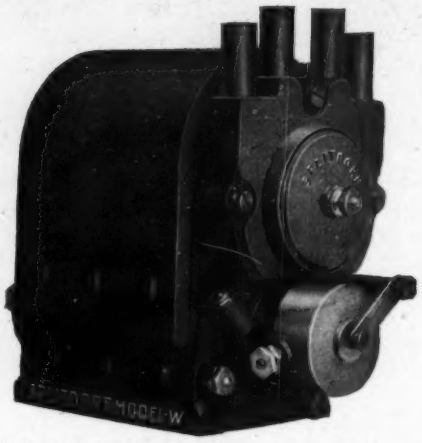
Splitdorf Model X magneto of the 2-magnet type, designed for 4-cylinder motors

well as preventing the burning out of the lamp filaments.

Four magnetos of the well-known Splitdorf low-tension type make their appearance for the first time at this winter's shows, minor structural changes on the older styles giving the latest models a smoother and more compact appearance. With vulnerable projections eliminated the changes are distinctly valuable. Models W and Z are of the three-pair magnet type, designed for heavy low speed, four and six-cylinder motors, respectively, while the X and Y models are of the two-pair magnet type for four and six-cylinder motors, respectively, in which efficiency has been raised to the highest standard.

The armature connection on each of these has been placed in the back plate of the instrument, as against the front of the breaker box. One larger contact brush is now used against the two of former practice, and a better "wiping of the armature" is secured to bring about a higher degree of efficiency. The breaker box spring pillar, too, has been lifted from the line of the base to a point above the breaker box.

The non-vibrating model S-S Splitdorf coil—part of the low-tension magneto outfit and the latest and most finished of all types of coils—is notable for its general construction. Easily and



Splitdorf Model W, 3-magnet type magneto for 4- or 6-cylinder motor

quickly disassembled, it will fire any engine perfectly and with precision, and its durability is one of its striking features. Its mechanical construction does away with the insulation material which has hitherto been applied in quantity to coils of this type. Wire terminals are protected by a cover to make them waterproof, and they are also numbered for easy wiring references.

Further information regarding the Splitdorf ignition and electrical appliances and prices may be had by writing the Splitdorf Electrical Company, 98 Warren street, Newark, N. J., or from any of the many Splitdorf agencies.

Krice Carburetors

At the Gray Motor Company's exhibit will be shown a line of Krice carburetors. Practically every Gray engine is equipped with this make of carburetor, and it has given universal satisfaction where used. The principle on which these carburetors operate is in the application of an annular or round spraying crevice. The gasolene emerges from this crevice, which is only eight to ten one-thousandth of an inch wide, and creeps up the side walls of the mixing chamber instead of being sprayed. The gasolene is thus spread out ready for rapid vaporization. A great economy in fuel consumption is claimed for this system. The Krice carburetor comes in the following sizes: No. O, ¾ inch; No. 1, 1 inch; No. 2, 1¼ inches; No. 3, 1½ inches; No. 4, 2 inches. A sectional model of the Krice carburetor will be shown at the Gray booth.

Gies Reverse Gears

The Gies Gear Company, Boydell building, Detroit, Mich., are makers of the well-known Gies reverse gears which have been on the market for some years. For 1913 they have three sizes of gears on the market of the following rating: Special No. 1, for engines developing 1½ horsepower per 100 revolutions; Model A, for transmitting 2½ horsepower per 100 revolutions; Model B, transmitting 4 horsepower per 100 revolutions.

They are an open gear, but, realizing the advantage under certain conditions of having the moving parts covered, the company has designed a gear cover with all the good features of an enclosed gear without impairing the efficiency of their present model.

Gies reverse gear, showing cover attachment

The Gies gears have been on the market five years, during which time some 20,000 of them have been sold. The company says: "In these 20,000 we have 20,000 of the best salesmen in the world working for us. You will find them in every State in the Union. You will have no trouble in distinguishing them, for they have Gies Gear Company stamped on their backs. We expect every salesman to do his duty and want you to report any misconduct on his part. Whenever one of our salesmen is found wanting in any particular he is immediately recalled and a new one sent out in his place. This has been and always will be the policy of the Gies Gear Company."

Pyrene Extinguishers for Fighting Fire

In this day of strict Government inspection of motor boat equipment every boat owner sees to it that his fire-fighting equipment will not only pass inspection but is the best that can be had for the proper protection of life and property. The Pyrene Manufacturing Company will exhibit at the Boston Show through the Pyrene Company of New England a full line of their Pyrene fire extinguishers. These extinguishers have so often proved their efficiency and value that it is not necessary to dwell upon this point here.

The extinguisher comes in a very handy form, being made on the squirt-gun type with a nozzle which will throw a continual stream of Pyrene a distance of 30 feet. Pyrene is a combination of powerful gases in liquid form maintained without pressure and void of all moisture.

When the liquid is subjected to a temperature of 200 degrees F., or over, it is immediately transformed into a heavy, dry, cohering, non-poisonous gas blanket, which simply separates the two elements—flame from burning substance—thereby completely extinguishing all fires by means of lifting off the flame, without in any way injuring the material not touched by the fire.

In the general use of this extinguisher, particularly in confined spaces, the gases generated from the liquid expand in large volumes. These gases are pungent to the sense of smell, but they are entirely harmless to the operator.

All Kinds of Marine Hardware and Specialties

Everybody who has ever been to the Boston Show has found the exhibit of marine hardware of all descriptions, and specialties, of the A. S. Morss Company of unusual interest. Though they had a large amount of space last year it was insufficient to fully display all of the articles they handle, and this year they have engaged nearly half of the balcony at the Mechanics building, which gives them about 2,000 square feet of space. Here will be shown to great advantage their complete line of fittings and specialties, many of which they handle exclusively.

Outside of the regular line of marine hardware, boat builders' tools, etc., A. S. Morss Company will show the Morss Cowl Ventilators, Skene Chocks, Pitchometers for measuring pitch of propellers, Baby Lever Controls, Morss jam clamps, etc. One of the new devices which will be in great demand by reason of the stringency of the State laws in regard to adequately muffling the exhaust of the motor boat engine, will be the Forbes Swirling Muffler. The Morss Company is prepared to demonstrate conclusively that this muffler really stifles the exhaust, and does so without appreciable back pressure or loss of power from the motor. They will also show a large number of electrical specialties, such as lighting outfits, running lights, searchlights, etc., many of which are of the Cello type. The Morsco battery sets will also be shown. These consist of high-grade test batteries incased in absolutely water-proof boxes, especially adapted for open boats or boats where the engine is exposed.

Those who do not get to the Show can obtain a very complete catalogue of these fittings and specialties by writing the A. S. Morss Company, 44 High street, Boston, Mass.

The Gies Reverse Gear

The best-known motor boat accessory in the world. 20,000 in use throughout the world. Three sizes.

RATINGS:

SPECIAL No. 1 transmits 1½ H. P. per 100 revolutions, and should not be used on an engine larger than two-cylinder, 4½ x 4½ inches, or with a propeller larger than three-blade, 17 inches.....**$12.00**

MODEL "A" transmits 2½ H. P. per 100 revolutions, and should not be used on an engine larger than four-cylinder, 4¼ x 4¼ inches, or with a propeller larger than three-blade, 20 inches.....**$24.00**

MODEL "B" transmits 4-H. P. per 100 revolutions, and should not be used on an engine larger than four-cylinder, 4¾ x 4¾ inches, or with a propeller larger than three-blade, 24 inches.....**$48.00**

These prices are made possible by the fact that we make nothing but the **GIES REVERSE GEAR;** make them in three sizes only and make a lot of them. So don't let the price scare you.

GIES GEAR COMPANY

Boydell Building **Detroit, Mich., U.S.A.**

HOLMES LONG STROKE ENGINES

Built for Business

Our Engine will outwear any of the so-called "Heavy-Duty" engines. It has greater speed, more flexibility of control, and smaller gasoline consumption per H.P.

Let us prove these statements.

SEE OUR EXHIBIT IN THE BOSTON AND NEW YORK SHOWS.

THE HOLMES MOTOR CO., Inc.

Distributors of the

HOLMES ENGINES

Main Office: WEST MYSTIC, CONN.

Let Us Tell You All About Motor Boat Fires

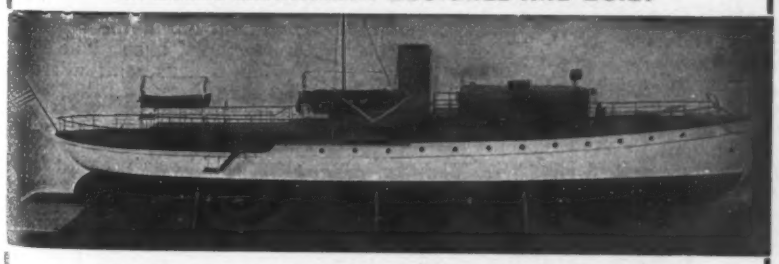
In every motor boat there is constant danger of fire. This type of fire is so difficult to get at and so menacing to occupants of the boat who may be miles from shore and at the mercy of the sea, that only one extinguisher has been devised which affords real protection. This extinguisher is **Pyrene.** Let us tell you all about motor boat fires.

Write for Illustrated Booklet

Pyrene **MANUFACTURING CO.**
1358 BROADWAY
NEW YORK CITY

MARINE MODELS A SPECIALTY

INVENTIONS DEVELOPED **PATTERN MAKING**
SPECIAL MACHINERY DESIGNED AND BUILT



THE H. E. BOUCHER MFG. CO.

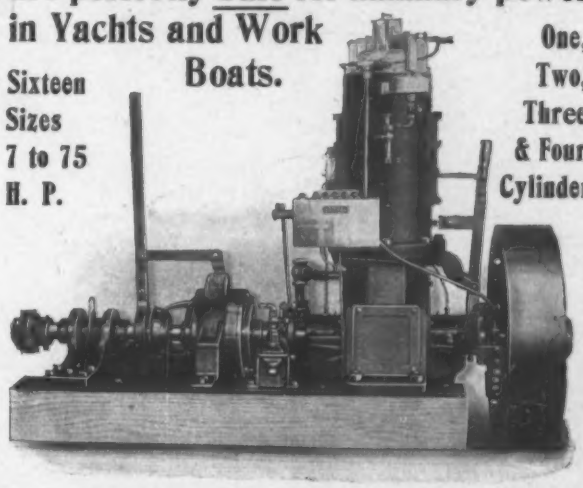
20 FULTON ST. **NEW YORK**

Remington Oil Engines

are perfectly Safe for auxiliary power in Yachts and Work Boats.

Sixteen Sizes 7 to 75 H. P.

One, Two, Three & Four Cylinders



"WITHOUT AN EQUAL FOR SIMPLICITY"

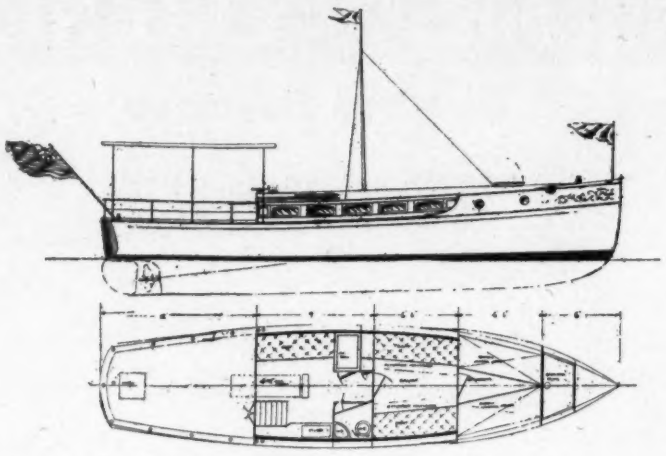
They are now in successful operation in nearly every country in the world and give absolutely reliable service at a very low cost of operation.

Catalog Y gives full information.

The Remington Oil Engine Co.

120 Broad Street New York

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

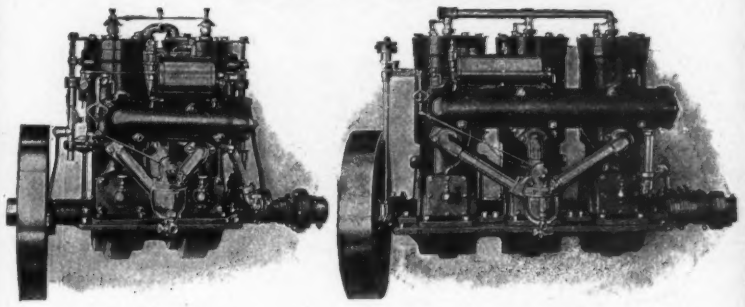


WE BUILD Yachts complete and there is no divided responsibility. Our 20th Century Motor, which we build in our own shop, is considered one of the leading engines. We are in position to build you a complete yacht, furnished and equipped, at prices that cannot be equaled when construction and finish are taken into consideration. Let US figure on your new yacht.

N. Y. Yacht Launch and Engine Co.
Morris Heights New York

Bridgeport
"THE MOTOR THAT MOTES"

EQUIPPED WITH THE BRIDGEPORT VAPOR RECTIFIER



Absolutely no base explosions, giving *Safety, Flexible Control* and *Fuel Economy.*

The **1913 BRIDGEPORT** possesses the advantageous features of the best two- and four-cycle motor, with the undesirable features eliminated. We term it *The Advanced Two-Cycle Motor.* We have fifteen sizes in work and pleasure models. Send for free catalog L.

Our 1913 models are fitted with the *Bridgeport Oil Transformer,* with which they operate perfectly on

KEROSENE!

THE BRIDGEPORT MOTOR COMPANY, Inc.
BRIDGEPORT, CONN., U. S. A.

New Michigan Reverse Gears

Among the new articles which the Michigan Wheel Company, of 1130 Monroe avenue, Grand Rapids, Mich., has placed on the market for 1913 are two new reverse gears. One of these new gears is of the multiple-disc type, both enclosed and open, and the other is an expansion ring clutch, also in both enclosed and open types. The points of these gears to which the Michigan Wheel Company draws particular attention are that they are powerful, light and compact.

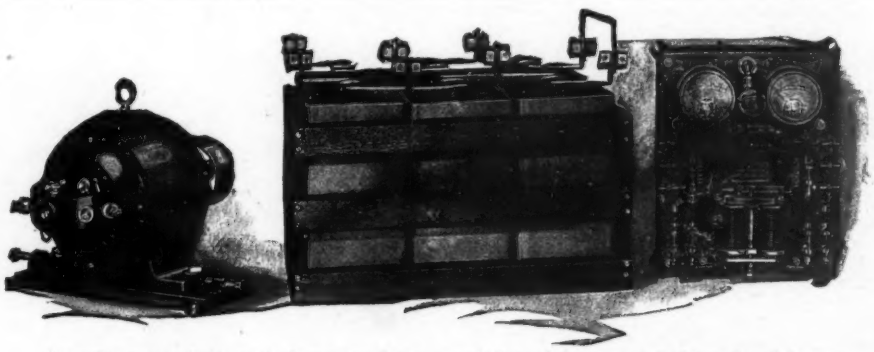
In the multiple-disc type the gears are 30 per cent carbon special gear steel, stub-tooth; they are spur cut on Fellows gear shaper; are noiseless, hardened, bronze bushed, and no gears run faster than the engine. The reverse is 66 2/3 of the go-ahead.

Other advantages which are included in both closed and open types are the increased friction area on reverse band and clutch; increased wearing surface on drum, pinions and bearing; twelve multiple-disc steel saw blades, alternating bronze, floating in oil. Everything is accessible in these gears for adjustment of all working parts, and they come ready to install and run. They are made in six sizes.

The multiple-disc clutches are made like the automobile disc clutches, with fifty to ninety cut teeth, the same as spur gear, which fit accurately into the drum, having a bearing point every second of its periphery, increasing its holding power and strength.

The other type of gear is of the clutch expansion type with improved dogs, ten to one leverage, made of steel with adjustable screws round head, hardened; the cone, drum, reverse band and clutch being ground. In the enclosed type the upper case is removable, and everything is accessible for all working parts. The enclosed type comes in six sizes and the open type in eight sizes.

In addition to these new clutches the Michigan Wheel Company have even a larger line of their famous Michigan speed wheels than ever before.



New Dayton 20-light outfit for motor boats, consisting of dynamo, switchboard and battery

Dayton Lighting Outfits for All-Sized Boats

There is nothing that appeals to the motor boat or yacht owner as much as a well-lighted boat, and as electricity is now the approved method of lighting, the outfits manufactured by the Dayton Electrical Manufacturing Company, of Dayton, Ohio, will be sure to interest the crowds.

There are a number of new lighting outfits for 1913 which this company has placed on the market, and to use their own words, their "exhibits will be larger, brighter and stronger than ever before." The Dayton lighting outfits consist of a dynamo, switchboard and battery, and the plan of operation provides for the charging of the battery by means of the dynamo, driven off of the main or auxiliary engine, the current for the lights and for ignition of the engine also, if desired, being drawn from the battery. The switchboard makes all connections between the dynamo and battery.

The cut herewith shows the new twenty-light outfit. This is designed for fair-sized motor boats, and is a very popular outfit, the company having sold a number of them to large working boats also. This outfit has sufficient capacity to carry twenty 12-candlepower, 13-volt Tungsten lamps, or their equivalent in lamps of other and various candlepower, at one time for eight hours at a period on one charge; or it will carry half as many lights twice as long, etc.

Two new additions to the Dayton line are a six-light outfit which will carry six 6-volt 10-candlepower Tungsten lamps or their equivalent for eight hours. This outfit is a popular size for small and medium-sized cruisers. The switchboard contains volt ammeter, indicating switch and automatic cutout. Another new product is the Dayton arc searchlight outfit, the searchlight of which has a candlepower of 1,500. The searchlight has a 7-inch Mangin lens with mirror reflector.

Hyde Turbine Propellers and Clutch Control

At the Boston Show will be seen a full line of well-known Hyde turbine propellers for use on motor boats and craft of all kinds. The essential features on which the efficiency of the Hyde turbine propellers is obtained are design, material and workmanship. Hyde turbine propellers are designed on the true screw principle with large blade areas, and are therefore particularly efficient for high-speed work, while they also give excellent results when used with heavy-duty engines.

Manganese bronze of the highest tensile strength

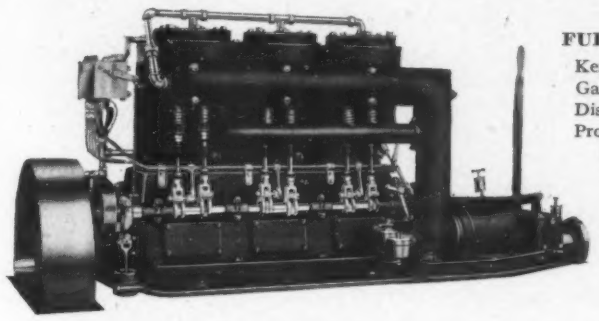
"WOLVERINE"

The Motor with the Bore and Stroke

3c. Per Ton
For Carrying Freight 160 Miles

A 75 H. P. "WOLVERINE" Engine operating on Suction Producer Gas enabled the owners of the 115′ schooner "Dr. Lykes" at Miami, Fla., U. S. A., to carry freight a distance of 160 miles at the rate of 3c. per ton fuel cost, an achievement unparalleled by any other gas engine made

You who want **Reliability** and **Economy—Real Service** from an engine, investigate the "WOLVERINE."



FUELS:
Kerosene
Gasoline
Distillate
Producer
Gas

Our catalog No. 70 gives full information.
Write for it today.

WOLVERINE MOTOR WORKS
Bridgeport, Conn., U. S. A.
(Formerly Grand Rapids, Mich.)

Fairbanks-Morse Marine Engines

"High Ball," Champion 20-Footer--24 H. P.
Standard Fairbanks-Morse Engine.

Win on Reliability

A 20-ft. boat driven by a 24 H. P. Fairbanks-Morse Engine won the Puget Sound championship against boats that were powered by engines rated at 40, 50 and 100 H. P.

That race was won on reliability and proves conclusively the

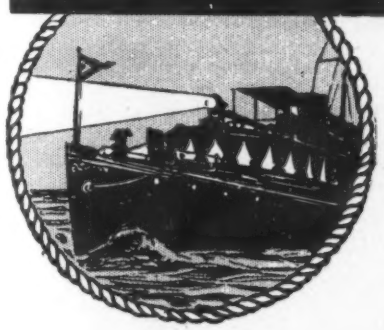
Dependability and Conservative Rating

of Fairbanks-Morse Engines. They always give more than rated power and can be relied upon for service under all possible working conditions. Tried and proven satisfactory for the hardest service. Backed by over 30 years of engine-building experience.

High Speed Engines, 3½ to 24 H. P. Slow Speed Heavy Duty Engines, 7½ and 15 H. P. Send for Catalog No. DR1316. Agents wanted.

Fairbanks, Morse & Co.
New York Chicago New Orleans San Francisco
The Canadian Fairbanks-Morse Co., Limited, Agents for Canada
St. John, N. B. Montreal Toronto

Dayton Launch Lighting Outfits



INSIDE, outside, port and starboard—all the lights on your launch can be brilliant, dependable electric lights. Searchlight too, if you wish. All your's to command at the turn of a switch. Ample current for ignition always available. Write for complete catalog and description.

The Dayton Electrical Mfg. Co.
90 ST. CLAIR STREET DAYTON, OHIO
At the New York Motor Boat Show, February 15, Space No. 39.

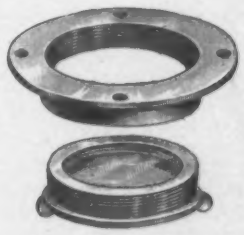
KRICE Carburetor 20% More Power

30 DAYS TRIAL

We absolutely guarantee the Krice Carburetor to use less gasoline—give better control and 20% more power. Your money back if it doesn't.

The only sure way to know that you are getting *all* the power from your engine is to try a Krice Carburetor.
Write to-day for literature.

KRICE CARBURETOR CO.
1205 Oakland Ave. Detroit Mich.



W. C. Improved Deck Light and Ventilator

A combination that admits air and light into the engine room, or cabin, without the necessity of going on deck. Cannot be opened from the outside; when closed is flush with deck. No key required; two lugs on the underside; can be unscrewed at will.

Furnished in brass or galvanized iron hood ventilator, or separately without ventilator. Can be used as a port light, on side of hull or deck house.

Dealers have W. C. Improved Deck Light and Ventilator or can get it. Write us for full particulars.

WILCOX, CRITTENDEN & CO., Inc.
Established 1847 MIDDLETOWN, CONN.

Here is the Surest Way You Can Find to Sell Your Boat.

Spend a few dollars advertising her in the SPECIAL BOAT-FOR-SALE NUMBER OF YACHTING for March.

As a reader, your own good judgment will tell you that YACHTING must from necessity appeal to a class of people who are bound to be especially interested in "FOR-SALE" advertisements of good boats.

YACHTING's record of actual *results* on such advertisements for *years* PROVES that beyond argument, too.

Those who want to get new boats make YACHTING's BIG ANNUAL FOR-SALE NUMBER for March their final guide, for they know that in it they are *sure to find* the announcement of practically *every* boat that is on the market.

If you want to sell either a power or sailing craft, therefore, be sure to take advantage of the special low rates in this *distinctly* special number.

The rate is $1.75 per inch, and we will make an illustration without charge for all advertisements of 2 inches or more, if photograph is furnished us. There are 3 columns to a page, and the rate of $1.75 is based upon an advertisement 1 inch deep and 1 column in width. If an advertisement is 1 inch deep and *2* columns in width, it is figured as 2 inches, and costs $3.50, and so on.

Note the For-Sale advertisements in the front part of this issue for variety, size, style, etc.

All copy (descriptive matter and photographs) must be in our hands by February 17th, without fail. ACT NOW.

YACHTING 141-145 West Thirty-Sixth Street, NEW YORK

is used exclusively in these propellers. This is the same metal that the manufacturers have used for the past sixteen years in propellers furnished for battleships and torpedo boat destroyers of the United States navy, and also for many ships of the merchant marine. It is guaranteed to meet Government requirements for Manganese bronze.

In addition to the turbine wheels the Hyde Windlass Company, of Bath, Me., show a pneumatic clutch control that will be very interesting to motor boat users.

Curtiss Hydro-Aeroplanes

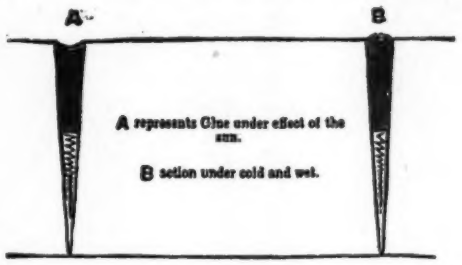
Since the advent of the hydro-aeroplane, for use in both water and air, the sport of aviation and yachting has become very nearly akin, and the flying motor boat which Glenn H. Curtiss, the aeroplane inventor, has recently perfected should appeal to all yachtsmen who have ever sailed a boat or driven a hydroplane. This boat is the last word in watercraft and aerial construction. A speed of 60 miles an hour on the water is claimed for it, which eclipses *by miles* any speed heretofore obtained by a hydroplane, while 65 miles an hour is claimed for it in the air. Those who have tried these aerial boats say that the sport is thrilling and fascinating to the last degree, and their use on lakes, bays and comparatively open water is said to be as safe as that of any other sport in which the average man indulges without a thought. The booklet describing these flying boats, issued by the Curtiss Aeroplane Company, of Hammondsport, N. Y., Department V, should prove interesting reading for boatmen.

Jeffery's Marine Glue

Of all the abominations on a boat a leaky deck is the worst. And on most boats, especially those whose decks are not canvas-covered, the alternate wetting and drying out in the sun that a small boat's decks are subjected to is apt to make tight deck seams a rarity.

L. W. Ferdinand & Co. have, however, a marine glue for deck seams and other work where a high-grade glue is required, that is recognized as the standard for yacht work, and which will not crack or dry out under the hardest use. Samples of this glue, Jeffery's, will be seen at the Boston Motor Boat Show.

The flexibility of this glue is one of its most valuable qualities, as it allows the timbers to contract and expand, still retaining its great adhesive power to the edges of the plank. When the plank becomes contracted by the heat of the sun, a draught takes place on the glue, and the seam becomes expanded. When the planks are swollen



by rains, and there is a pressure on the glue, the seam becomes contracted. As the temperature varies these forms continue to assume each other's shapes year after year (if the deck has been properly calked and payed) until the deck becomes worn down to the oakum. *It does not stick to the feet in hot weather.*

Fourteen pounds Jeffery's Extra Quality Marine Yacht Glue will run from 200 to 250 feet of seam ¾ inch deep by ¼ inch wide. If properly used and not overheated, it will last from four to six years in a seam, and has been known to last ten to twelve years. When carefully applied to a dry deck it will never leave the sides of the seam.

In paying decks the glue should be *poured* from the ladle into the seams, *holding the nose of the ladle an inch from the deck.*

When the decks have been payed with pitch or rosin, the old material is to be broken out, and a *rase-knife* used to *clear the seams,* in order that the *glue may adhere* to the edge of the plank; the seams may be afterwards calked or hardened down, as may be required, to the depth before described, viz.: *three-quarters of an inch,* if the thickness of the timber will allow of it; and if the weather be sufficiently fine to allow the decks to be payed with pitch it will do also for the glue. The deck should be cleaned off on the following day if the ship be required for immediate service, otherwise it is best to *clean off* when she goes to sea. No inconvenience from its uncleanliness will be found, as with pitch. Send for full directions, etc., to L. W. Ferdinand & Co., 201 South street, Boston.

Shipmate Ranges for the Yacht

In spite of the many patent kerosene and alcohol stoves made for yacht use there is a strong tendency to stick to the good, reliable coal and wood ranges where the boat is large enough to carry one. Luckily, though, the boat does not have to be a large one nowadays, as the Stamford Foundry Company, of Stamford, Conn., makers of the Shipmate range, have made a specialty of stoves for yacht use, and make them to suit any size craft, from the 30-foot power cruiser to the largest steam yacht.

There has just been added to the already long line of Shipmate ranges another size, No. 16.

This is a complete connecting link between the four-hole Shipmates and the six-hole; for while it has four 8-inch holes, the same as the largest original four-hole, No. 15, and corresponds with that size in appearance, it has exactly the same fire-box as No. 32, the smaller of the six-hole Shipmates; and the size of the oven is between that of No. 15 and that of No. 32.

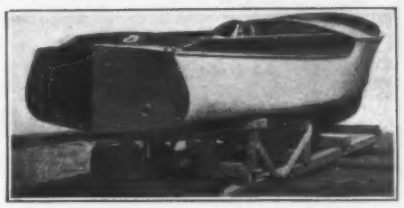
The Stamford Foundry Company intend to have a Shipmate size for everyone who needs a range for his vessel or boat, and they are determined to make them as good as they can be made.

They have recently put on the small doors lever door handles like those on the oven doors, only smaller, to make sure that these small doors cannot swing open from any motion of the vessel.

In order to have of the same pattern all covers and centers which are of the same size, they are

DOYLE "V" BOTTOM
AUTO EXPRESS
22½ x 5 ft.
WITH CURVED SIDES

The best boat ever conceived. Contains all the physical advantages of the "V" bottom with the beauty of the round bottom boat with all its graceful lines.



THE NEW MODEL, Built exclusively by us.

SPECIFICATIONS:

SPEED, 18 MILES PRICE, $975.00

Length, 22' 5"; beam, 5' 1½"; freeboard, bow, 30½"; stern, 19"; draft, 21"; fastenings, copper and brass; mahogany trim; cedar planking; 25-h.p. Hazard 4-cylinder, 4-cycle motor, reverse gear, rear starter, Bosch magneto, etc.

THE OLD MODEL. Built by other companies.

FOUR OTHER MODELS:

18 ft. Family Launch
21 " Runabout
26 " "
20 " Hydroplane

Large line of cruisers and work boats.

K. D. FRAMES AND COMPLETED LAUNCHES

THE BAYONNE LAUNCH CO. and THE M. I. DOYLE CO.
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Show Room:
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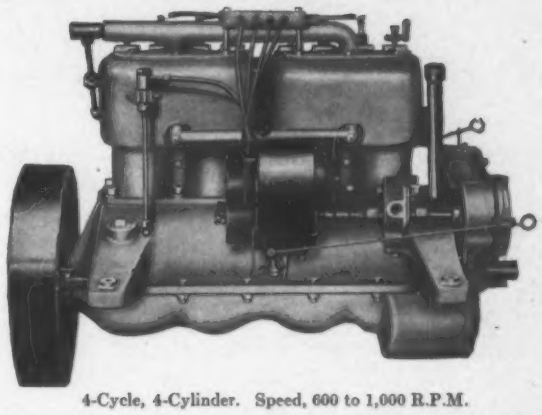
NEW YORK CITY

Office and Plant:
E. 35th St. and New York Bay
BAYONNE, N. J.

America's Standard 12-H. P. Marine Engine

KERMATH

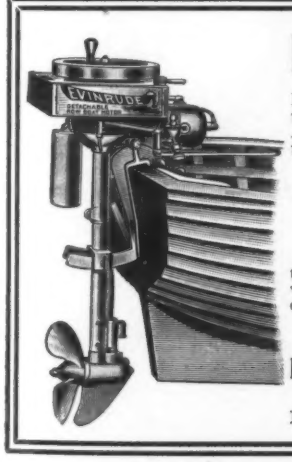


4-Cycle, 4-Cylinder. Speed, 600 to 1,000 R.P.M.

In 1910 when the "KERMATH" was first introduced there was a deluge of inquiries from all over the world from persons who knew of the superiority of 4-cycle type engines and these engines have proven their worth in the hands of hundreds of users in the past two years.

Our moderate prices are the result of manufacturing *one size engine only* in large quantities. We use only the best materials the market affords, and our workmanship is unsurpassed. Price $150.00 to $200.00, depending on equipment. Buy the original "KERMATH"—not an imitation. Our motors are designed by James Kermath and made and sold exclusively by

KERMATH MANUFACTURING COMPANY
Dept. Y, DETROIT, MICH.



Did You Ever Evinrude?

Evinruding means gliding through the water at an 8 to 10-mile an hour pace in a motor-driven row-boat. Any row-boat will do, yours or a rented one, as in less than one minute you can attach an

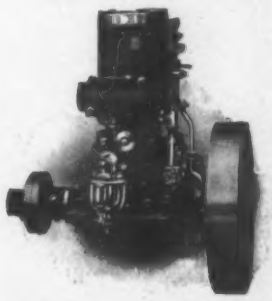
EVINRUDE
DETACHABLE ROW-BOAT-MOTOR

to it and make it a motor boat. This portable motor weighs but 50 pounds, is reversible and weedless. It carries like a satchel. Illustrated catalog on request.

Exhibited New York and Boston Motor Boat Shows

EVINRUDE MOTOR CO., 434 Walker Street Milwaukee, Wis.
Members of Nat'l Ass'n of Engine and Boat Mfrs.
New York Salesroom, 260 West Broadway

MIANUS 1913
FIFTEENTH YEAR



5-H. P. Mianus, Model, 1913

The 1913 Model MIANUS is ready for immediate delivery. Built from new specifications. Larger cranks and connecting rods; larger bearings.

RELIABLE STURDY POWERFUL
GUARANTEED FOR LIFE

MIANUS, 1913, specifications for two-cycle marine motor now used by the United States Government.

Bulletin 21, describing 1913 MIANUS, Free

THE MIANUS MOTOR WORKS, Stamford, Conn.
ELEVEN BRANCH STORES:

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Steering Gears
and MARINE FITTINGS for
Power and Sail Yachts

Edson Manufacturing Company
Established 1859
206 Atlantic Avenue Boston, Mass.

IF YOU WANT MORE SALES AND PRESTIGE—*Think this over.*

A man makes friends according to the kind of man he is.

Magazines are like men in that respect—absolutely.

Therefore:

Did you ever stop to realize that YACHTING is unlike any other magazine in the field, and that it has a "class" and "atmosphere" all its own? That it sells for 25 cents a copy and $2.00 a year, which further intensifies the distinctiveness of its audience?

These points of strong individuality make for a substantially individual circulation—and *that* YACHTING unquestionably has.

YACHTING is an absolutely *necessary* magazine if an advertiser desires to cover the field, or if he cares to have his merchandise known to the *thousands and thousands* of boat owners (and their number is greater today than ever) who read YACHTING in preference to *any other* magazine, and pay a good price for the privilege of doing so, too.

They are essentially the kind of people whose good will and patronage most manufacturers *particularly* desire.

We can show advertisers how for a very small sum they can get exceedingly useful representation in YACHTING *for a full year*—a representation too useful by far to be profitably ignored.

If you are a manufacturer, won't you *in your own* interests let us explain this plan? Won't you write us a letter stating you're "from Missouri?"

If you will do that, we will "show" you a way to make more money.

R T French

Advertising Manager.

YACHTING 141-145 West 36th Street, NEW YORK

now putting new tops on the ranges to fit them to take covers and center pieces which will be standard for all Shipmates made after the change is completed.

Such changes as we have mentioned indicate the policy of the makers of Shipmates—when they see an opportunity to improve the ranges they do not neglect it.

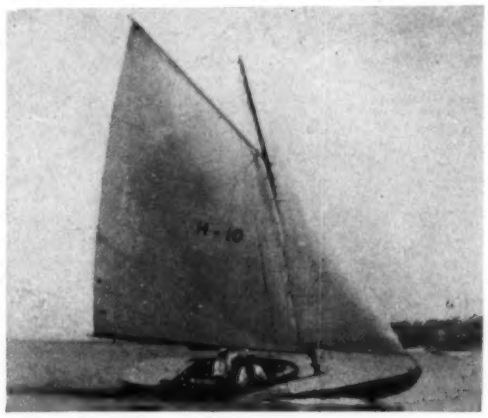
If anyone wants to read a good sea yarn they should send to the Stamford Foundry Company for their latest booklet, entitled "Doughnut Robbins's Bet," a Gloucester fishing story, by F. H. Wallace. That is one of the best yarns ever written—bar none.

Valspar for All Kinds of Yacht Work

Though Valspar, a marine varnish manufactured by Messrs. Valentine & Co., has been on the market for several years, the exhibit of its manufacturers at the motor boat shows will still attract unusual attention by reason of the fact that every boat owner is interested in high-grade varnishes.

Realizing the necessity for yacht use of a high-grade varnish that would resist the action of water, Valentine & Co. some years ago turned their attention to providing such a varnish. Many laboratory experiments were made extending over a period of five years, which resulted in the product known to all yachtsmen as Valspar.

Until the last few years every boat owner has looked upon revarnishing two to three times during the season as a necessary expense of the upkeep of his boat. He took it for granted that no varnish could withstand the action of water long, and he looked upon the discoloration of his deck as a necessary evil. With Valspar, however, Valentine & Co. have demonstrated that it will not turn white in water, either fresh or salt. The company claims that if a dinghy, varnished inside with Valspar, is allowed to fill with rainwater there would not be a mark after bailing her to show where the varnish had been immersed. To-day Valspar is found on the decks and bright works of the largest yachts as well as of the smallest.



Wa Wa, owned by Mr. Adrian Wilson, which won a place in 13 races out of 16 last year

American-Made Sails

The past season proved conclusively that the sailing yacht was not going out of existence, as the fleets that took part in sailing regattas all over the United States were greatly in excess of any other year. That this renewed interest in sailing is keeping up is evidenced by the fact that Wilson & Silsby, of Rowe's Wharf, Boston, Mass., have more orders on their books for sails at this season than they have had for many years. At the middle of January they advised us that they had orders for over fifty suits. With their improved facilities, the best of material and competent workmen, they say that they are making better sails than ever, in proof of which they point to a list of the championship winners of the last season which were equipped with their sails. This list included winners in all parts of the country. They are also receiving very many orders from abroad for sails.

The little picture at the head of this article is of Mr. Wilson's own boat Wa Wa, which on Massachusetts Bay last season was placed in 13 out of 16 starts, and annexed the following championships: The Massachusetts Yacht Racing Association, Boston Yacht Club and Hull One-Design Class. Wilson & Silsby have recently made arrangements for having made up for them a line of yacht duck of the finest combed Egyptian cotton constructed especially for yacht use, which enables them to supply an absolutely perfect cotton duck for their sails.

A Maxim Silencer and All Kinds of Marine Fittings

Wilcox, Crittenden & Co., Inc., of Middletown, Conn., are putting on the market for 1913 a Maxim silencer for the exhausts of motor boats—an invention that marks a new epoch in power boating. This silencer was designed by Mr. Hiram Maxim, who is known as the inventor of the gun silencer. An absolutely noiseless silencer is one that has long been desired, and with this Maxim muffler attached to a Gray & Prior engine, set up in the factory of the Colt Works, it is said that the popping of the exhaust could not be heard at a distance of only 30 feet. The silencing of the noise in this muffler is accomplished by utilizing the centrifugal force of the exhaust gases and permitting them to whirl until their energy has been dissipated. There are three air chambers in the silencer surrounded by an outside shell, the exhaust gases being led from one to the other of these chambers before they make their escape to the outer air. These Maxim silencers should prove popular for boat owners.

Another article of the Wilcox, Crittenden line is an improved deck light and ventilator for admitting light and air into the engine room or cabin. One of the advantages of this outfit is that it can be opened from the inside, and when closed is flush with the deck. No key is required to open it, two lugs on the under side allowing it to be unscrewed at will. It has a hood ventilator, furnished in either brass or galvanized iron.

A Yacht Enamel Paint and Vernosite Varnish

The F. W. Devoe & C. E. Raynolds Company, of 114 Devoe building, New York City, will show

BOATS OF QUALITY

STEAM, SAIL, GASOLENE OR WHITE ASH POWER

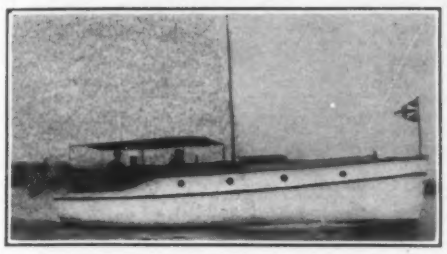
Cruisers, Speed Boats, Hydroplanes

MILTON BOAT WORKS

RYE, N. Y.

DESIGNERS and BUILDERS

STORAGE REPAIRS SUPPLIES



31-ft. Milton Special

20-ft. Milton Runabout

Holland Yacht Enamel

Whitest : : :
Most Durable :
Easiest Working
Highest Gloss :

For Topsides and Deck Houses

MADE BY

F. W. Devoe & C. T. Raynolds Co.

Yacht Paints and Varnish Specialists

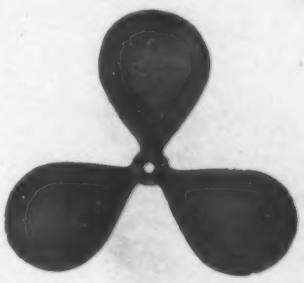
Founded 1754

114 Devoe Building New York

GET RESULTS

Equip Your Motor Boat with a

Hyde Turbine Type Propeller



The Propeller of Quality

Manufactured by

HYDE WINDLASS CO.

BATH, MAINE

Michigan

FAMOUS MICHIGAN SPEED WHEELS REVERSE GEARS & MARINE HARDWARE

LET US SAVE YOU MONEY

Supposing you bought a propeller wheel and you could not get any speed out of it, or a reverse gear that gave you all kinds of trouble These things may not have cost you much and you thought you were saving money, but before you get any pleasure out of boating you would have to get a new equipment.

Now in selecting your wheels, reverse gears and marine hardware, get the best there is The best is always the cheapest in the end. The Michigan line is a well-known Standard line, the most complete and of the best quality The prices are the lowest when you take into consideration quality, and when you buy the Michigan line you won't have to buy again

You cannot buy a faster wheel than the Michigan or a better reverse gear or a better line of marine hardware, such as steering wheels, canopy tops, underwater exhausts, propeller jacks, accumulators, air pumps, chocks, cleats, stern bearings, stuffing boxes, in fact, everything for boat and engine

It will save you money to send for their large catalog and purchase the famous Michigan line of goods, they will guarantee you entire satisfaction

MICHIGAN WHEEL COMPANY, 1130 Monroe Ave., Grand Rapids, Mich.

JEFFERY'S MARINE GLUE

THE PURPOSES FOR WHICH THE VARIOUS GRADES ARE INTENDED:

For Deck and Hull Seams of Yachts and Motor Boats
—USE—
No. 1, Extra Quality
Black, white, yellow or mahogany color. Give black the preference; it is more elastic and satisfactory in every way.
Specified by all first-class designers, and used exclusively by all the prominent builders.

For Waterproofing Canvas, for Covering Decks, Tops of Cabins, Canvas Boats and Canoes
—USE—
No. 7, Soft Quality
Black, white, or yellow. It not only waterproofs and preserves the canvas, but attaches it to the wood, and with a coat of paint once a year will last as long as the boat.

Waterproof Liquid Glue is used for the same purposes as Number Seven Soft Quality
Also in combination with calico between the double planking of diagonally built boats.
It is ready for use and requires no heating; simply open the can and paint it on, like ready-mixed paint.
This glue will also attach cork, felt, rubber, leather, and linoleum to iron, steel, or wood.

Special Marine Canoe Glue
Best Filler for Canvas
Black, White and Yellow
Our 25c. emergency cans made a big hit. Every canoeist should carry one; it is as valuable to him as a repair kit to a bicyclist or automobilist.
It is a Johnnie-on-the-spot article that no boatman should be without. Order by parcel post.

FOR SHIPS' DECKS USE { **No. 2, First Quality Ship Glue** / **No. 3, Special Navy Glue**

All put up in 1, 2, 3 and 5-lb. cans; also 14, 28, 56, 112-lb. boxes either tin or wood

INSIST ON HAVING THE *RIGHT* KIND IF YOU HOPE TO OBTAIN SATISFACTORY RESULTS

The largest dealer in your town carries this in stock; if not, he should. Tell him to write us for the agency. AGENTS WANTED EVERYWHERE.

For Sale by all Yacht, Boat and Canoe Supply Houses and Sporting Goods Dealers. Send for Samples, Specimens, Circulars, Directions for use, etc.

L. W. FERDINAND & CO. :: Importers and Distributors :: **201 SOUTH STREET BOSTON, MASS., U. S. A.**

a line of their yacht paints and varnishes at the Boston Show. The marine paint products of the Devoe & Raynolds Company have long been appreciated by boat owners on account of their durability and high finish. One of the specialties of this company for 1913 is the Holland Yacht Enamel for topsides and deck houses. The demand for enamel paint by yacht owners has been growing rapidly, and this new enamel will make a special appeal to those who want a durable, easy-working and glossy white finish.

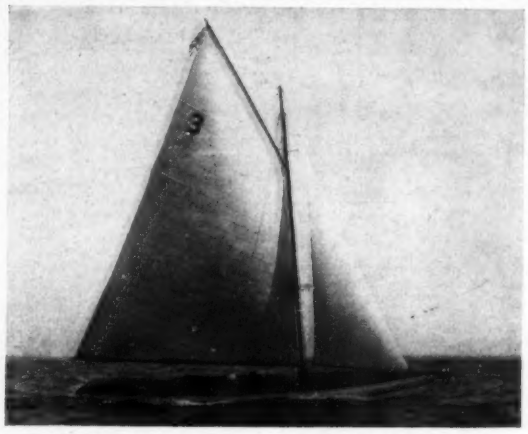
Among the other paint specialties which the Devoe & Raynolds Company put out are the Devoe Vernosite, a long-lived spar varnish, which is particularly good for salt-water use, as it holds its color and lustre. Devoe Columbia yacht white is a semi-gloss yacht white which will not crack, peel or chalk, while their yacht black is a full gloss black which will not turn gray or blister. For bottom paint, Vernosite bronze, incorporated with spar varnish, is guaranteed to prevent barnacles or other sea growth.

Marine Hardware of All Descriptions

Every man who owns a boat, or hopes to own one, and especially those on the Great Lakes and tributary waters and the lakes of the Middle West, that use Chicago as a market, will find the marine supply catalogue of George B. Carpenter & Co., of Wells and Michigan streets, Chicago, Ill., of great value as a reference book in ordering any new equipment for his boat or in replacing any of his fittings.

This catalogue contains over 550 pages of description and price list of every kind of marine appliance, from a glass port light or carburetor to the most intricate steering apparatus, and has besides a number of chapters devoted to the operation and installation of marine engines, rigging and handling of boats, rules of the road, and the overhauling of boats and engines.

If you already have this catalogue, the 1913 price list of George B. Carpenter & Co. is ready and will be mailed free upon request.



Cima, the fast Sonder boat, equipped with Lowell Egyptian duck sails

Lowell Egyptian Duck for Yacht Sails

The Lowell Weaving Company, manufacturers of Lowell Duck, brought out last year an Egyptian duck for a racing sail cloth. This duck, marketed under the trade name of Lowell Egyptian Duck, was at once accepted by all the leading sailmakers, and many of last year's best-known racing yachts were fitted with the new product. This year it will be used on practically all of the new yachts and many of the older racing yachts will be refitted with this duck.

Years of experimenting with all cotton yarns, including Mississippi Peeler and Sea Island, have demonstrated that for a racing sail cloth, extra long staple, brown Egyptian yarn is the nearest to perfection.

Lowell Egyptian Duck is finer and closer woven; and while it has the highest breaking strength of any duck now on the market, it will keep its set and shape better and outwear other ducks by years. In spite of the fact that it is more closely woven it is softer, more pliable and easy to handle and furl.

Because of its superiority as a racing sail cloth the Lowell Weaving Company recommend this Egyptian duck for sails of racing yachts. The duck will be made only in one quality, in 4 to 12-ounce weights and Nos. 9 to 000.

Detroit Lubricators

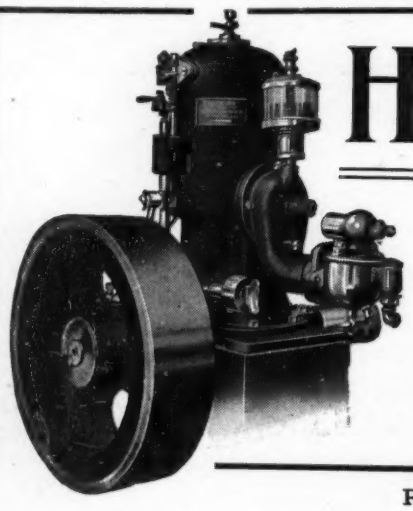
No part of the equipment of an internal-combustion engine is as important as the lubricator. This is not only true of high-speed boats, where perfect lubrication is absolutely essential, but also of engines for all classes of work.

The Detroit Lubricator Co., of Detroit, Mich., manufacturers of Mechanical Force Feed Oilers, have a large line ready for 1913, which includes oiling devices for every type of engine. They will be seen on many engines at the Show. The reservoirs come in capacities of 1 pint to 2 gallons with from one to thirty feeds, and the oilers can be driven from any moving part of the motor, by either ratchet or gears, belt or sprocket drive.

In addition to a full line of oilers the Detroit Lubricator Company have on the market a line of Detroit Packless radiator valves which not only will not leak but do not need repacking. Catalogue P69, issued by the Detroit Lubricator Company, will give full information and will be sent upon request.

Harthan Propellers

The Harthan propeller, made by the McFarland Foundry & Machine Company, of Trenton, N. J., has been on the market for many years, and was designed especially for speed boats, great attention being given to proper design, balance and pitch of the wheel, and a great many of last season's famous boats were equipped with Harthan wheels. As an example of the value of these wheels may be cited the fact that the United States Government has recently equipped practically all of its power surf boats in the Life Saving Service with Harthan propellers. Not only do they have to deliver the full power of the engine, but have to be extremely strong for such service.



HARTFORD 2-Cycle Marine Engines

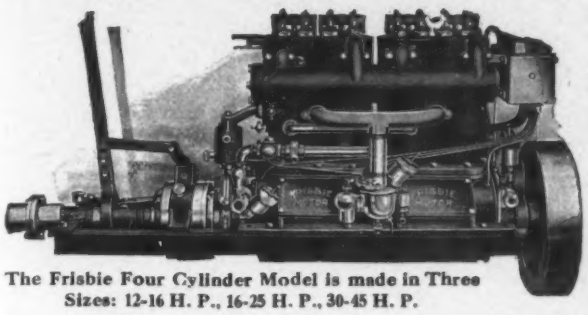
Made in single and double cylinders thoroughly guaranteed in every way

Model X as shown. 5 and 10-H. P. Single, 10 and 20-H. P. Double
Regular Model. 3, 5, and 7-H. P. Single, 6 and 12-H. P. Double

The Gray & Prior Machine Co., **656 SUFFIELD STREET, HARTFORD, CONN., U.S.A.**

BRANCHES: 117 Commercial Street, Portland, Me., 300 East Pratt Street, Baltimore, Md.

Please mention YACHTING when corresponding with advertisers.



The Frisbie Four Cylinder Model is made in Three Sizes: 12-16 H. P., 16-25 H. P., 30-45 H. P.

Kerosene or Gasoline
The FRISBIE Motor

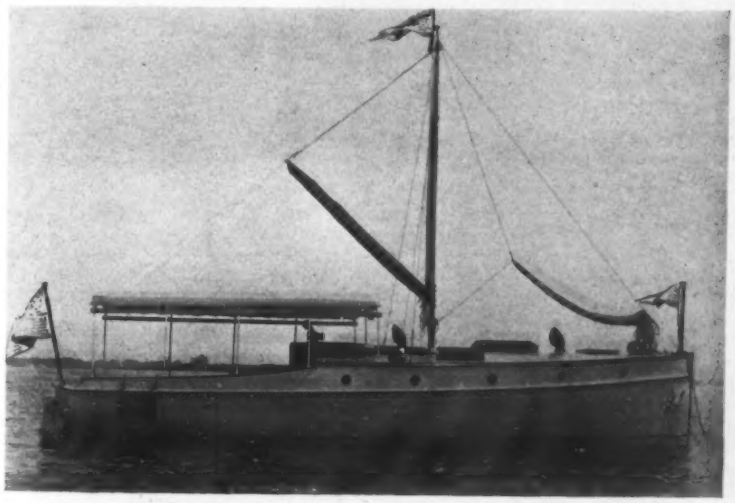
Power—valves in the head. Simple—valves in removable cages. Quiet in operation. Adjustable push rods. Economical, Accessible, Refined. Four Cycle, 1-6 Cylinders, 3-75-H. P.

The Frisbie Remarkable Valve Cage is Simple & Popular

THE FRISBIE MOTOR, COLL. ST., MIDDLETOWN, CONN.

Swasey, Raymond & Page
(Incorporated)
NAVAL ARCHITECTS and ENGINEERS
622 Colonial Building
BOSTON, MASS.

"GREY GOOSE" SPECIAL
35′ x 34′-6″ x 9′ x 3′. 20-H. P. 9½ miles speed.



This is one of our well-tried stock designs. We have a number of stock designs of boats 20 to 53 feet long, for sale at reasonable prices.

Write for particulars.

YOU CAN'T GET THIS *BIG VALUE* ANYWHERE ELSE.

We make the unqualified statement that there isn't a boat value on the market that equals the

Rice 20-foot
Special at $275.00

Complete with 4-H. P. motor. Speed 8 miles. Boat *and* engine fully guaranteed.

Building this particular model in large numbers, with "overhead" reduced by years of study to the very lowest point, and selling *very close*—alone makes this price possible.

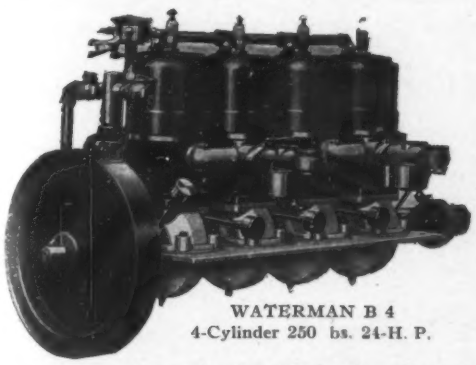
Other builders *must* charge from 1-3 to 1-2 more.

Don't Take Our Word

For this, but in your *own* interest at least let us *prove* our case by the evidence of satisfied users, and the actual *records* of the boats themselves.

Send for catalog (free on request), and get the details of construction. You will be astonished at how thoroughly *good* these boats are *through and through*. Don't forget—we have been building and backing them for years.

RICE BROTHERS COMPANY
(Dept. J.)
EAST BOOTHBAY, MAINE, U. S. A.



WATERMAN B 4
4-Cylinder 250 lbs. 24-H. P.

The "Porto" is *TWO* H. P.—55 Lbs.

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ANNUAL MOTOR BOAT SHOW ANNOUNCEMENT

BRUNS, KIMBALL & CO., Inc.

132 Liberty Street, New York City

Wish to announce that they will be prepared during the progress of the Motor Boat Show, Madison Square Garden from February 15th to February 22nd, to take any make or size of second-hand engine in exchange for either a STERLING four-cycle, or an EAGLE two-cycle engine and make a most liberal and fair allowance.

Ask for Mr. Bruns, or Mr. Kimball, or Mr. Parr, at either the Sterling or Eagle exhibit and let us talk it over.

Ask us for a copy of our latest bargain list of over one hundred and fifty rebuilt engines.

Curtin's Sails on the Westward

When the American schooner yacht Westward was sold recently to a German syndicate she was brought down to New York and fitted out for her voyage across the Atlantic. As this voyage was to be made in December it was necessary to equip her with a new suit of sails of the strongest material, and yachtsmen will be interested in knowing that the order for these sails was placed with John Curtin, Inc., of 4 South street, New York City. The Westward left here the forepart of December, and made a wonderful run across of 12 days and 17 hours from Montauk to the Lizard —a great passage for a yacht in December North Atlantic weather. Capt. Coalfleet, who took her over, writes that he was very much pleased with the sails, both as to fit and wearing qualities.

Kermath Four-Cycle Motors

The Kermath Manufacturing Company, of Detroit, Mich., manufacturers of the Kermath motor, announce that for 1913 they will sell their own engines exclusively, believing that their customers may obtain the best satisfaction by dealing with them direct. They will establish exclusive distributors and agencies throughout the country to take care of and keep in closer touch with the consumer.

The Kermath engine is a four-cycle, four-cylinder, 12-horsepower motor, made in one size only. While the general principles of automobile construction have been followed in the manufacture of these engines, they are designed primarily for marine purposes, the company keeping in mind the strenuous conditions that have to be met in their operation in a boat.

The Kermath engine weighs only 330 pounds, and develops its rated power at 800 to 1,000 revolutions per minute. It has very long main bearings, enclosed tappets and valve stem, and a simple and efficient lubricating system, while its generally "classy" appearance and evidence of power and staying qualities make it appeal to the motor boat owner who wants a four-cycle engine of this size.

Inter-Club Season of 1912

(Continued from page 92.)

After considerable discussion it was voted to disallow the protest, on the ground that Eleanor had sailed in several races already, and therefore was entitled to finish out the rest of the season in Class C. Though this decision gave the Eleanor a technical right to sail in the class, it was generally hoped that she would enter some other class. The intent in forming Class C was to furnish racing for heavy, old-style boats and not boats of modern type.

On July 20 the Winthrop Yacht Club held its regatta. There was a smashing southwest breeze, and many boats were disabled. Meemer, owned and sailed by John T. Cavanagh, of the Quincy Yacht Club, made her first appearance in Class A. Meemer is a big boat for Class A—44 feet 3 inches over all, 30 feet waterline and very beamy, and her performance was watched with interest by all the yachtsmen present. Nutmeg defeated Meemer handily, though the latter took second prize. Flirt and Virginia were disabled. In Class B Winona surprised everybody by capturing first prize, though Quakeress was close behind. Barracouta and Sintram both met with accidents and withdrew. Eleanor won in Class C and Maritza II in Class S. In the catboat class, Clara won with Dartwell second. Other winners were: Class H, Marion III, owned by Ralph C. Goudey, of the Winthrop Yacht Club; Class I, 18-footers, Dorchen II, and Class X, Barbara.

July 27 was the date of one of the most important racing events of the season, the 100-mile ocean race given under the auspices of the South Boston Yacht Club, open to all boats entered in the Inter-Club Association. The course was from the South Boston Yacht Club house to the Graves' whistling buoy, thence to Boston Lightship, to Cape Ann whistling buoy off Thatcher's Island, back to Boston Lightship, then to the Cape Ann whistling buoy again and home to the starting line. The race started at 4 o'clock in the afternoon with a moderate southwesterly wind. Just after crossing the starting line Nutmeg carried away her rudder post and was obliged to withdraw. This was a great disappointment to her crew, as she was generally picked as the winner.

All night the racers sped along under a brilliant moonlit sky, with a moderate breeze and smooth sea to delight the hearts of the enthusiastic Inter-Club yachtsmen. It was one of the most glorious nights I have ever seen, and this event was perhaps the most successful long-distance race ever held on Massachusetts Bay.

Another feature which added to the yachtsmen's convenience that night was the presence of the torpedo boat Rodgers, which was at the disposal of the judges. The Rodgers kept the fleet in sight at all times with her searchlight, and the boats were greatly aided by having its rays play on the Thatcher's Island mark.

Meemer led the fleet from the start, and crossed the finish line about 8 o'clock Sunday morning, covering the hundred miles in 15 hours and 36 minutes. She carried off the handsome silver trophy offered by Commodore John F. Burke, the young commodore of the South Boston Yacht Club. The next boat to finish was the redoubtable H. Lindsay, which easily won in her class, C. Chewink II sailed a fine race and won second prize. Clorinda, Wanderer and Tangent followed in order in Class A.

Lethe won easily in Class B, followed by Winona and the catboat Dolly III. Such a wonderful night and so interesting a race deserved a larger field of starters, and another year undoubtedly this affair, which will become an annual event, will attract a large number of starters.

(To be concluded.)

From Nassau to New York

(Continued from page 103.)

conditions of sea, tide and weather; and I should advise any one going down to plan to run the 200 miles outside from Beaufort, N. C., to Charleston, S. C. This is not a serious matter if one waits for good weather. During the first 80 miles of the

Yacht Sails and Canvas Work Of All Description

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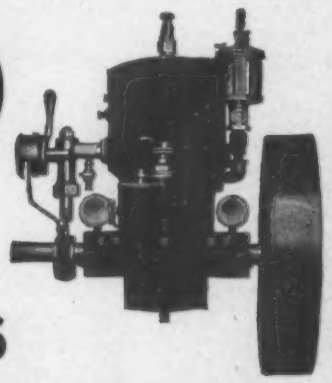

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run no good harbor can be made, but after that you have Southport, N. C., and Georgetown, S. C., to run into if advisable to do so.

In calculating the distance from Miami to New York, it must not be overlooked that the mileage of such a trip as I took is greatly increased by the long side runs often necessary to get up into towns and landings, or even to anchorages, by the windings of rivers, creeks and sounds, and by going round shoals in bays, promontories, etc.

DISTANCES RUN BY MYRTLE IN NAUTICAL MILES

	Inside Route.	Open Ocean.
From Miami to New River Inlet		20
From Miami to Palm Beach	65	
From Palm Beach to Jupiter Inlet	12	
From Jupiter Inlet to Titusville	103	
From Titusville to Mosquito Inlet	35	
From Mosquito Inlet to St. John's River.		90
From St. John's Bar to Charleston, S. C.		170
From Charleston to Cape Fear (Frying Pan Shoals Bell Buoy)		115
From Frying Pan Shoals Bell Buoy to Beaufort, N. C.		90
From Beaufort to entrance of Pamlico Sound	20	
From entrance Pamlico Sound to Elizabeth City	110	
From Elizabeth City to Norfolk, Va.	45	
From Norfolk, Va., to Chesapeake City, Md., via Chesapeake Bay	200	
From Chesapeake City to Delaware City, via Delaware Canal	13	
From Delaware City, Del., Bordentown, N. J., via Delaware River	60	
From Delaware and Raritan Canal	44	
From Raritan River	15	
Distance from Nassau, N. P., to Miami, Florida		170
Total	722	655

Take it all in all, a trip of this kind is an education and an eye-opener, and the training a man must inevitably get in agility of body, alertness of mind, power of observation and general resourcefulness and self-reliance, is, it seems to me, worth many times the difficulties he has to put up with. And so I would say again, go! Go soon, before you are too old to rough it and enjoy it. Go while the very feel of the long, slow swell and surge of the Atlantic under your keel is happiness! Go while you still can take satisfaction in the thought that however tired you get you will "be granted in the end the gift of sleep"; for even in your wet oil clothes and with your rubber boots on, as soon as the dusk falls you will be ready to sleep, on deck if necessary, if you are sure of only one thing—that you've got her to a safe place where her anchors, with plenty of scope, will hold without dragging till daybreak.

Building Cabin on Motor Boat

(Continued from page 99.)

It is advisable before painting to sprinkle the cotton with water.

What is perhaps the best form of deck for the case in point consists of two layers of planking, each about ¼ inch thick, both laid fore and aft with seams overlapping. Of these the first layer may consist of planks about 3 inches in width, laid simply edge to edge, but carefully jointed, as the underside will be visible from inside the cabin. The outer skin may consist of pine or teak, and should be carefully laid with the edges through-fastened to the previous skin and also to the beams, a layer of painted cotton cloth being laid between the two skins. Such a deck is absolutely watertight, has a good appearance, and is both strong and cheap.

When sawn beams are fitted, these are usually put in place before the deck planking is commenced, but in our case it will be more convenient to fit *bent* beams of American elm. The deck planking, therefore, should proceed so soon as the gunwale has been put in place. If sawn timbers are used, it is on the whole better to adopt the deck-shelf form of gunwale, which gives a better support to the beam ends. (See Fig. 6.)

When bent beams are fitted their ends may be cut off with a taper and fitted into slots, which should be cut in the gunwale before this is fitted in place. The beams may easily be sprung in place by bending them laterally. Extension timbers at two ordinary timber spaces apart will be sufficient in most cases to give the requisite stiffness, and a deck beam should be fitted at the head of each extra timber.

The deck planks should be tapered neatly towards the forward end, and should be finished off into the covering board, as shown in Fig. 7. The covering board may be carried all round the sides and across the after-end of the deck.

Having now laid the deck and sprung into place the beams, cut a half-round rubbing piece of good size, and work it over the joint between the lower edge of the first new plank and the original top strake. Another rubbing piece may be worked at the new sheer line.

The cabin will require a couple of gunmetal side scuttles on either side. These are fitted from the inside, and are held in place by screws. There is a considerable amount of work yet to be done in the fitting of a skylight and a sliding hatch. These fittings are rather difficult to make, and are much better purchased second-hand if possible.

Carlins and "fore and afters," as they are called, can easily be fitted to the deck, their object being to stiffen the deck and to provide "sills" to which the skylight and sliding hatch may be fastened. Having now completed most of the work in the upper part of the cabin, a neat lining of matchboarding may be worked from the level of the cabin floor to the height of the original gunwale, the lining being terminated by a rack running longitudinally. At the forward bulkhead, in line with this, a glass rack may be worked, having the same curvature as the cambered deck. Each berth will be 6 feet 6 inches in length, leaving a distance of 18 inches between the after-cabin bulkhead and the berth. This space, of course, may be utilized for sideboards, having cupboards under. The transom berths themselves consist of shelves of ¾-inch red pine, 24 inches in width at the widest part, and having the upper side 15 inches above the floor level. Lee boards 3 inches in height, of mahogany, may be worked along their inside edges, which will serve to keep in place the fairly heavy cushion which should be provided.

The cabin floor consists of red deal or yellow pine, about ⅞ inch thick, laid on cross pieces of similar material, and the work of fitting these is so obviously simple that detailed instruction

would be superfluous. A cabin table completes the cabin furniture, and when this has been made the woodwork of the cabin is practically complete.

Built by Matthews Boat Company

In a for sale advertisement of a 52-foot power boat belonging to Mr. H. D. Emerson, which appeared in our January number, we inadvertently said that the boat was built by the Mathis Yacht Building Company. This was an error. It should have read Matthews Boat Company.

Power Boats in Boston Y. C.

(Continued from page 81.)

The power boat men were getting acquainted as only men thrown together on the sea in all kinds of weather can get acquainted. New boats were constantly being brought into line, and the little red booklets were almost falling to pieces from constant use. The Division was being "licked into shape." A. P. Homer was made flag lieutenant, rating next to Lieutenant-Commander Upton, and his clean-bodied speed cruiser Remoh, with Capt. "Bill" Brown's Coaster, a snappy and fast cruiser, designed by "Brother Sam," were appointed scout boats, and made themselves generally useful in transmitting messages to the fleet. By the middle of July the power boat men, believing that the Division could have more fun by going along on the big cruise as a separate command, decided that they would so do, but would likewise let it be known that they would always be on hand to help out their brethren of the sail. As it turned out it was fortunate that they did stand by.

On the first two runs of the combined fleets, from Marblehead to Little Harbor, N. H., all went smoothly, but then there came a constantly-increasing rip-snorter out of the northwest that has made the 22d of July memorable in Boston Yacht Club annals. The doings of the Power Boat Division on that day would make a volume in themselves. One after another came the accidents to sailboats. Gusts from off the Maine coast took out masts, broke shrouds, ripped sails. But always, with one exception, members of the Power Boat Division were on hand to prevent actual disaster among the disrupted fleet of windjammers.

It is too long a story to tell in detail how the scout boat Coaster made after the dismasted 30-footer Pontiac; how, when Coaster herself became disabled aid was brought to her and her charge by F H flags, "render assistance"; how the cruiser Alsorie II picked up Dr. Wells' little Brownie, and at some risk added Pontiac to her tow line; how Coaster was finally brought plunging in behind Remoh's stern; how the flagship Elizabeth arrived at Portland with H. A. Boyd's Marie, H. A. MacInnis' Norma II and A. E. Coupal's Mignon, all disabled sloops, in tow, fighting every inch of the way and being obliged to pick up her tows time and again when lines parted.

It is still another long story to tell how little "one-lung," 6-horsepower Narbo, with F. H. Hamilton and his sons aboard, safe at anchor and tidied up for the night at Cape Porpoise, where she had come in out of the blow, put out into the smother to rescue the sloop Chewink IV that was drifting to sea with her sails in ribbons, picked up the disabled craft, made fast, and then for seven hours hung on until the sturdy little engine brought the odd-mated pair to safety.

I have said that power boats were on hand to look after disabled sailing boats with one exception. That exception was in the case of Early Dawn III, a famous 25-footer. She was dismasted off Cape Elizabeth. Her plight was seen only by another sailing boat that had to desert her in order to look after herself. The power boat Henrietta was hailed by the latter's crew and told to look for Early Dawn, which was off a red buoy. Nothing could be made of the hail by Henrietta's crew save something in regard to a red buoy, so after trying in vain to find out in the noise of the wind and engine why they should look out for a red buoy they went on their way. There was a little text for a sermon right here. Had the sailboat been possessed of one of those little red booklets aforementioned, and had F H flags, "render assistance," been hoisted, Henrietta would have known what to do and would have done it; Early Dawn's crew would have been spared some 24 hours of tossing in the trough of the sea; newspapers would not have needed scare headlines, and wives and families would have been spared much worry. Early Dawn finally crept into Little Harbor under jury rig while the revenue cutters Androscoggin and Woodbury were scouring Massachusetts Bay for her.

Had the "tin soldier" methods of the Power Boat Division been vindicated? Had the Division made good? Well, rather!

The Division leaped into fame at a bound, and the skippers were looked on as good sports by the windjammers. This reputation did not lose anything on the next run of the fleet, from Portland to Mere Point, Me., when Remoh went to the help of the power boat Templar, aground on Basket Ledge. Of the rest of that memorable cruise little need be said. The Power Boat Division, threading in and out among the islands, now in single column, now in double and now abreast, gained experience, proficiency and precision until the maneuvers were really creditable displays. To the Kex, the smallest boat in the fleet, a fully-found, miniature cruiser, is due credit for plugging away with her swifter brethren through all sorts of weather. Some twelve boats were in the Division on that cruise and every skipper proved his worth.

Since those days the Power Boat Division has continued to grow and flourish. On the last cruise of the season, over Labor Day, twenty-four craft flying the flag of the Boston Yacht Club anchored in Provincetown on the tip of Cape Cod—a goodly growth since that first six-boat run. The indoor season is now at its height, and the Division is keeping up the good work with a dinner every month at winter headquarters, when affairs of the coming season are talked over and at which there are talks and lectures of value to power boat men.

And so the Power Boat Division seems to be a fixture. Now the club has something to offer power boat men, and these followers of the sport are joining the club to take part in the doings of the Division, just as sailboat men are joining to take part in the racing of the windjammers. Is the Division disrupting the club, as was predicted by the ever-present pessimists at the first of the season? Not a bit of it. Mr. Windjammer doesn't have to worry about an eventual split in the club. Instead, he can point with pride to the success of his club in solving a difficult problem. As for the power boat men they now feel that they really belong. They have a big part in the life of the club—as important a part as that of the racing men. There is a feeling of good fellowship in the Boston Yacht Club as not before since power boats first shoved their noses into the waters of Massachusetts Bay.

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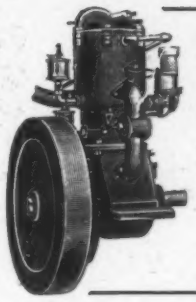

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WALTHAM, MASS.

PAGES 148-178 ADVERTISEMENTS

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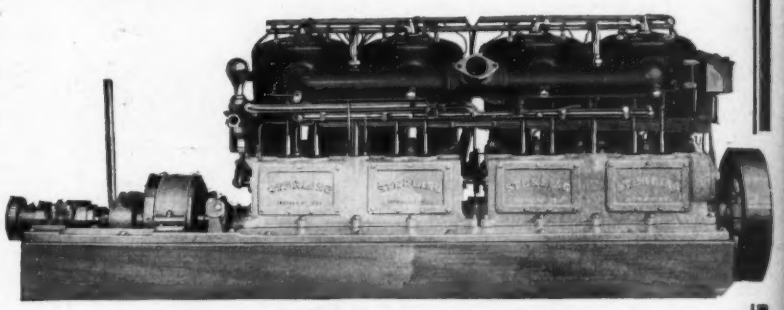

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